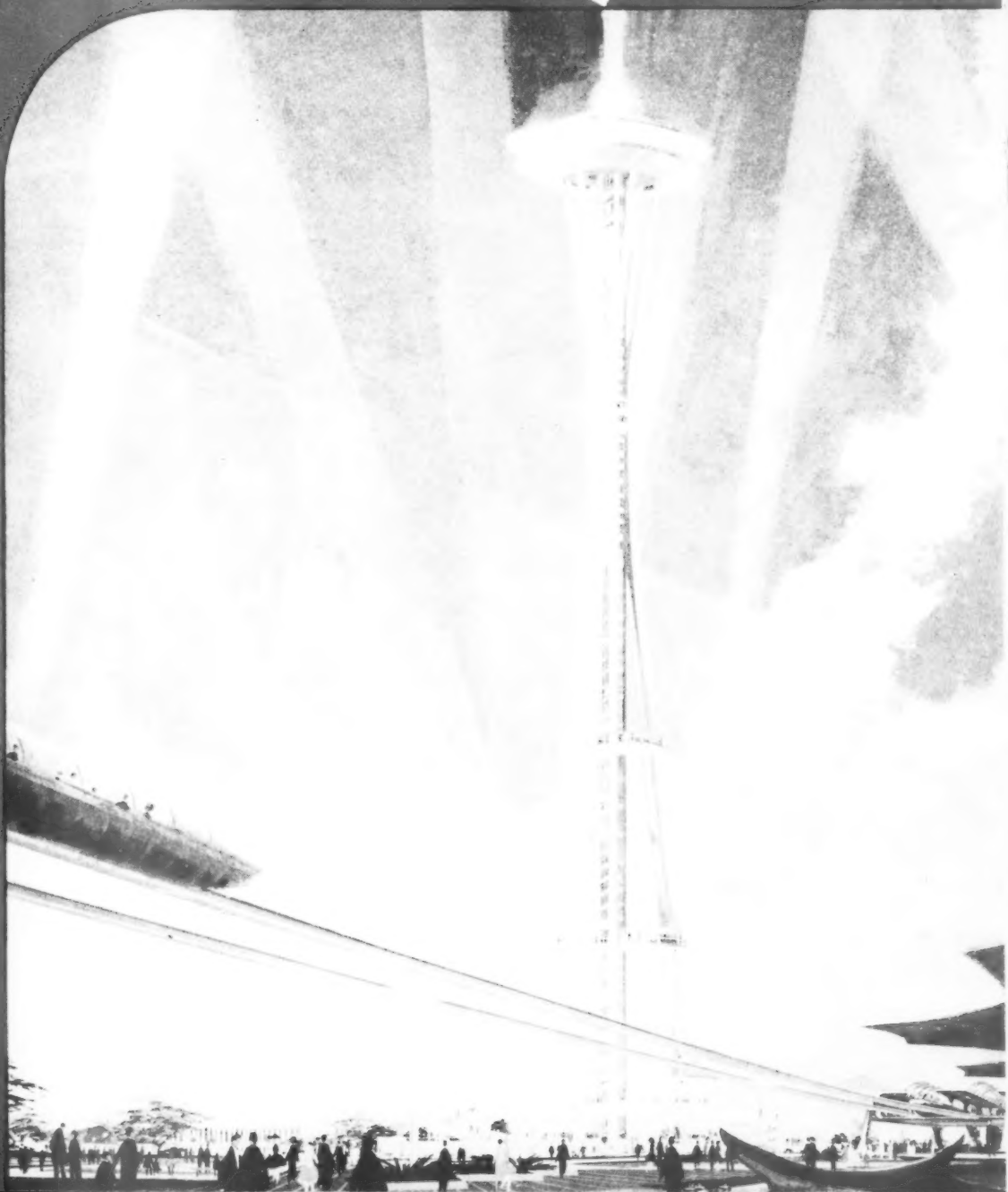


AMERICAN GAS ASSOCIATION

# Monthly



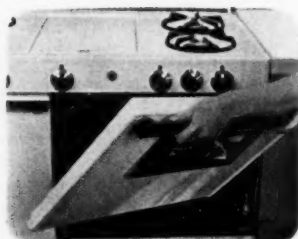
DECEMBER  
1961

# Ultra-automatic cooking with GAS...even difficult recipes are easy with this spacious CALORIC



**Broiling's faster, tastier!** Caloric's Ultra-Ray\*\* high broiler works up to 30% faster, seals in succulence, uses less Gas. Can be adjusted to half-input, too—more economy! Of metal mesh—good for life of range.

\*\*Reg. Trade Mark



**Cleaning's easier, too!** Oven and broiler doors are removable, oven interior is seamless. Caloric's burner top is one-piece waterfall design with raised drip-proof edge. Rotisserie, multi-skewer attachments.

*Caloric*

\*A.G.A. Mark © Am. Gas Assoc., Inc.

No matter how fancy the recipe, you'll turn it out with less watching, more confidence on this new Caloric *Heritage*.

The griddle is heat-controlled, the Burner-with-a-Brain\* adjusts *itself*, the oven has a clock-control *and* a new 140° setting—food can be kept hot for hours. *Without* over-cooking or drying out.

Yet modern features aren't the whole story. Caloric also brings you a heritage of quality—finest craftsmanship and materials are traditional at Caloric.

Standards like these are the basis for the Gold Star Award. Yet ranges that win it save money *because* they're Gas—installation and monthly bills are low, expensive parts never wear out. So shop your Gas company or Gas dealer first.



AMERICAN GAS ASSOCIATION

LIVE MODERN  
FOR LESS  
WITH

**GAS**



Space Needle, topped with a 40-foot gas flame, will dominate the Seattle World's Fair (see story on page 27)

SOARING into the sky above Seattle is the symbol of the 1962 World's Fair—a 600-foot spire topped with a saucer-shaped restaurant and a flaming gas beacon.

One memorable architectural feat has distinguished every past World's Fair. At the London Exposition of 1851, it was the Crystal Palace; the Eiffel Tower survived the 1889 Fourth French International, and at the last United States World's Fair 23 years ago, New York people saw the Trylon and Perisphere.

Now the Seattle World's Fair adds a significant symbol to the list: the Space Needle.

Dramatically conceived as a landmark attraction for the April 21-October 21, 1962 event, the Space Needle also qualifies as a theme structure for the Fair known as Century 21 Exposition, America's Space Age World's Fair.

Fairs are fun, and the Needle will add a special thrill for the more than 10,000,000 visitors who will see the Seattle World's Fair.

At 730 feet above sea level, here's what they will see:

A panorama of the fairgrounds below, the City of Seattle, Puget Sound, the Cascade and Olympic Mountain Ranges, and famed Mt. Rainier.

Architects and engineers predict the Space Needle will be one of the most-talked-about structures of the year. In slightly more than 13 months from the time it was designed by John Graham, Seattle-New York Architect, it will be completed and opened for the official ceremonies headlined by President John F. Kennedy.

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## CONTENTS FOR DECEMBER 1961

### FEATURES

PLAN BOOK OUTLINES CAMPAIGNS FOR '62 . . . . .	2
MILLIONS VIEW NEW MODEL KITCHENS . . . . .	4
CULINARY COLLEGE CUES CHEFS ON GAS . . . . .	6
TURBINES ADAPTED TO NATURAL GAS—by Robert C. Kluthe . . . . .	9
SAFETY STARS IN NEW FILM . . . . .	11
GASLIGHT SALES GO MERRILY ON . . . . .	13
THIRD QUARTER ACCIDENTS DOWN 20.9% . . . . .	14
MINNEGASCO BEAMS, WARMS PASSERS-BY . . . . .	15
LIFESAVING MEDAL RULES REVISED . . . . .	17

### SECTIONS

DEPRECIATION—OR OBSOLESCENCE?—by Otis E. Smith (Accounting) . . . . .	19
SEMINAR STUDIES PERSONNEL PROBLEMS (General Management) . . . . .	21
HOTEL SHOW HIGHLIGHTS BUSY MONTH (Industrial and Commercial) . . . . .	23
USING THE COMPUTER IN DISTRIBUTION—by Robert D. Sickafoose (Operating) . . . . .	25

### DEPARTMENTS

FACTS AND FIGURES . . . . .	8
MEET YOUR ASSOCIATION STAFF (Hope Deegan) . . . . .	12
INDUSTRIAL RELATIONS ROUNDTABLE . . . . .	16
INDUSTRY NEWS . . . . .	27
HIGHLIGHTS OF CASES BEFORE FPC . . . . .	30
A. G. A. LISTS NEW PUBLICATIONS . . . . .	32
PERSONAL AND OTHERWISE . . . . .	33
OBITUARY . . . . .	35
CONVENTION CALENDAR . . . . .	35
PERSONNEL SERVICE . . . . .	36

### INDEXED IN APPLIED SCIENCE AND TECHNOLOGY INDEX

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NO. 12

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## Plan Book outlines campaigns for '62

The new PAR Plan Book, announcing all of A. G. A.'s promotion, advertising and merchandising programs for 1962, is now available to the gas industry.

The 1962 Plan Book contains 28 colorful pages, with a special 8-page insert from the Cramer-Krasselt Company of Milwaukee illustrating the Promotion Bureau's fully-coordinated program of 24-sheet posters, indoor displays and dealer kits.

As the Plan Book shows, utilities now have at their disposal an all-inclusive program, the "Coordinated Campaigns," for promotion at the local level. The program includes identical art work for in-store displays, outdoor posters, car



### 20 A.A. Sales Aids. Magic for You!

How much has water been heated with GAS? America's homes have used...

How many gallons were heated with GAS to warm water used in the kitchen?...

Let all of these A.A. aids help you and your dealer sell more GAS Water Heaters this year.




### 10 NEW! COORDINATED CAMPAIGNS

Illustrated on this page are the major materials for the 1962 "Coordinated Campaigns" both of the main display program and the local level.

Let us bring all of the materials together in one place, so you can see the coordination and the many ways in which the A.G.A. can help you and your dealer sell more GAS Water Heaters this year.

Philip F. Atlas, Chairman, Promotion Committee



### 6 GOLD STAR GAS

Statistics show Rain 52 Washdays a Year

A.G.A. Gas Dryer Sales Maker

**DRY CLOTHES FASTER... FOR MUCH LESS WITH GAS**




### APPLIANCE PROGRAM

THE FOLLOWING:

24-SHEET POSTERS

UTILITY TIE-IN DISPLAYS

Christmas display

dryer display

water heater display

spring range gold star display






### 21 OUTDOOR ADVERTISING

COLOR DISPLAY

PAPER AD MATS

BAG ADVERTISING





and truck cards, newspaper ad mats and shopping bags. Use of these new coordinated materials, together with special merchandising packages for special seasonal promotions, and other ideas and suggestions disseminated through the Promotion Bureau "Promotion Notes" bulletins will provide concentrated national impact at the local level.

As in past years, the new Plan Book serves as a compact guide to all of the PAR programs and includes special sections on the Blue Star Home Program, Home Service, National TV and Print Advertising, and the Educational Service.

Also included is an outline for the Gas industry's new TV dramatic series, *Theatre 62*, and the Gas industry's new

TV spokeswoman, Jinx Falkenburg.

The 1962 version of the "Campaign Calendar" has been reduced to a page outline of "industry averages" collected from various utility sources around the country. This "Calendar" outlines the most popular period of promotion for gas appliances and shows how residential promotion can be a year-round job.

Ronald A. Malony, chairman of the General Promotional Planning Committee, says:

"The theme for the 1962 A. G. A. Plan Book of residential promotion, merchandising and advertising is 'National Promotions with Local Impact.' Shown within its pages are scores of sales and merchandising aids and ideas

which can help utilities and their dealers to realize greater sales and greater profits."

Philip F. Atlas, chairman of the Promotion Committee, says:

"The coming year, 1962, looms as another year of tough competition at the market place. It becomes increasingly important for a growing industry such as ours to meet the competition head-on with the best we have. In the areas of promotion and merchandising, the A. G. A. Promotion Bureau has developed superior sets of sales aids for utilities and their dealers."

Copies of the 1962 Plan Book may be ordered from the A. G. A. Order Department at \$1.00 per copy.



GOOD HOUSEKEEPING designed this compact layout



WONDERFUL WORLD sponsored this kitchen



EVERYWOMAN'S-FAMILY CIRCLE

## Millions view new model kitchens

**G**as kitchens, designed by national consumer magazines and leading cabinet makers in cooperation with A. G. A.'s Home Bureau, were being seen this fall by millions of potential customers and by thousands of key people in the building industry.

Included in the gas industry exhibits at the A. G. A. Convention in Dallas, Texas, in October, were nine model all-gas kitchens and laundries from the pages of eight national magazines.

Through arrangements and assistance by the Lone Star Gas Company, all of these displays were located on the grounds of the Texas State Fair, where they were viewed by an estimated 2,700,000 visitors in addition to A. G. A. Convention-goers.

Through the pages of the magazines, of course, the kitchens and laundries were seen by many more millions.

Most of the kitchens also were being shown this month at the National Association of Home Builders Convention, at McCormick Place in Chicago, December 3-7.

Several were shown at the National Retail Lumber Dealers Association Convention held in Chicago November 4-7.

Magazines represented by displays at the A. G. A. Convention were: *Living for Young Homemakers*; *House and Garden*; *Better Homes & Gardens*; *McCall's*; *Good Housekeeping*; *Wonderful World*; *Everywoman's-Family Circle*; and *American Home*.

*Parents'* magazine and A. G. A. were co-sponsors of a complete all-gas house, the "Advance" Blue Star home.

In addition, *Bride & Home* and *Ladies' Home Journal* magazines entered gas kitchens in the NAHB show, as did Hamilton Cabinet Company, Geneva Modern Kitchens, Dimensional Kitchens, and Keystone Cabinet Company.

Individual kitchens feature such concepts as a "Living Center," consisting of a combination kitchen-den-fallout shelter arrangement. All of the kitchens are distinguished by expert artistry in cabinet design and color selection.

Each kitchen or laundry is equipped with essential gas appliances which include new gas ranges, ovens and burners; the recently developed gas dishwasher; modern gas refrigerators and freezers; and gas dryers.

Besides the model kitchens and laundries, some 76 exhibits by gas appliance and equipment manufacturers were entered in the NAHB show.

Another kitchen display which will be seen by many is a combination all-gas kitchen-laundry-family room, created by *American Home* in cooperation with the A. G. A. Home Bureau. Besides appearing in a six-page editorial feature, the complete room will be duplicated and installed in the National Design Center in New York City. Following a press and trade preview, the room will be kept on view for several months.



BRIDE & HOME magazine designed this attractive kitchen



LIVING for Young Homemakers entry at A. G. A. Convention



Hamilton Cabinet Company kitchen is in French Provincial



HOUSE & GARDEN planned this one for both work and meals



LADIES' HOME JOURNAL kitchen has cabinets by Whitehall



LIVING for Young Homemakers will show this one for NAHB



Another LIVING for Young Homemakers entry for NAHB show



BETTER HOMES & GARDENS planned this interesting layout



After a satisfying student-cooked lunch, editors and students take a breather on school lawn



The press group learns what a school chef does



The editors hear a lecture on the fine cooking of the future

## Culinary college cues chefs on gas

The advantages of gas cooking are being impressed on cooks before they become chefs, thanks to the donation of a new all-gas kitchen to the Culinary Institute of America.

The new kitchen was unveiled recently at a press conference sponsored by A. G. A. for editors of commercial restaurant and food magazines, food editors of magazines and newspapers, and hotel and restaurant association executives.

The group, accompanied by representatives of appliance manufacturers who donated equipment to the school, motored from New York to New Haven,





ns what meal chef's training



After the teacher demonstrates a meal, the students eat it



a lecture fine cooking



The school has new gas equipment—the heart of good cooking



Students work while teacher-chef watches

Conn., the site of the Culinary Institute.

A tour of the school was held, during which the press contingent met some of the 250 student-chefs and saw the various kitchens and shops. After the tour, the press was treated to a lunch prepared by the students.

The new gas kitchen balances off the number of kitchens at the institute fueled by gas and electricity. Students have an opportunity to judge for themselves the merits of cooking with gas as opposed to its competition.

The new commercial cooking equipment donated by manufacturers included a battery of heavy-duty modular-type

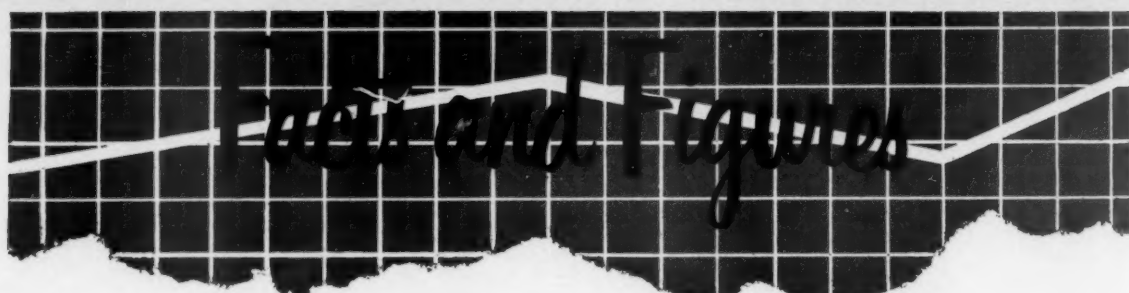
Garland ranges; broiler and roast ovens by the Welbilt Corporation; a self-contained gas-fired steamer, by the Cleveland Range Company; a Pitco model 14 deep-fat fryer, by J. C. Pitman & Sons, Inc.; an automatic self-contained gas-heated steam-jacketed kettle by Groen Manufacturing Company; a gas deck-type bake oven, by the G. S. Blodgett Company; and a Savory toaster, by Savory Equipment Company.

The Culinary Institute of America is the only technical institute in the United States for the training of expert chefs. Founded in 1946 by Mrs. Frances Roth, its present administrative director, the

school has trained over 1,800 cooks. But, according to the Institute's dean, Paul Fairbrook, many more chefs are needed.

This is so because the supply of experienced personnel from Europe is dwindling, and 18,000 European-trained chefs in the U.S. are withdrawing from service each year through death, retirement or resignation. "The American food industry," says the dean, "must train its own personnel."

And that—with the cooperation of gas appliance manufacturers, who donate equipment—is what the Culinary Institute of America is doing.



Prepared by A. G. A. Bureau of Statistics

An increase of 23 per cent was recorded for non-farm housing starts during the month of September. The gain, after last month's decrease, marks the third plus in housing activity in the past year and a half. It appears that the long awaited turning point for the previously slumping housebuilding industry has arrived.

As can be seen from the figures the housing pickup was good news to appliance manufacturers, whose shipments in September, 1961 were with few exceptions higher than in September, 1960. Sales of gas ranges during September, 1961 increased 6.8 per cent above sales during the comparable month of the previous year. Other major gas appliances registering gains in sales above levels recorded a year ago were gas-fired central heating equipment, up 1.5 per cent, and gas-fired furnaces and boilers, up 5.5 and 3.7 per cent respectively.

Total gas sales (excluding sales of liquefied petroleum gas distributed through gas utility mains) during the month of September, 1961, exceeded the gas sales of the same month last year by 1.4 per cent. A total of 5,649 million therms of natural, manufactured and mixed gas was sold to consumers during the current month compared to the 5,570 million therms sold in September, 1960. A more substantial gain in total gas sales was precluded by the decline experienced in industrial sales. However, residential, commercial and other sales of gas showed a very substantial gain, due to the increased consumption by new customers added to gas utility lines, through new home construction, the extension of utility mains into new territories and increased saturation of gas appliances in use.

Natural gas sales totaled 5,560 million therms during September, 1961 an increase of 1.6 per cent or 87 million therms above the 5,743 million therms sold during the prior September. Manufactured and mixed gas sales during September, 1961 declined 8.9 per cent or 9 million therms below the 98 million therms sold in September, 1960.

**SALES OF GAS AND ELECTRIC  
RESIDENTIAL APPLIANCES DURING SEPTEMBER, 1961**  
(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	September		August		First 9 Months, 1961	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
<b>RANGES (including built-ins)</b>						
Gas	190,800	+ 6.8	183,600	+12.8	1,383,100	- 2.8
Electric	150,300	+ 4.4	127,500	+ 3.3	1,182,500	+ 1.8
<b>WATER HEATERS</b>						
Gas	191,900	-15.7	212,800	-23.8	1,923,300	- 9.1
Electric	76,000	+ 7.0	61,400	+29.3	573,000	+ 3.5
<b>GAS HEATING—Total</b>	146,394	+ 1.5	126,277	- 2.4	872,503	+ 0.1
Furnaces	109,300	+ 5.5	94,200	- 2.8	679,300	+ 1.4
Boilers	19,294	+ 3.7	18,277	+11.2	111,503	+ 6.5
Conversion Burners	17,800	-19.5	13,800	-13.8	81,700	-15.4
<b>OIL-FIRED BURNER INSTALLATIONS</b>	—	—	51,471	- 4.4	—	—
<b>DRYERS</b>						
Gas	57,453	- 3.0	43,331	+19.0	261,608	- 9.0
Electric	105,404	- 1.0	79,015	+11.9	504,528	- 6.0

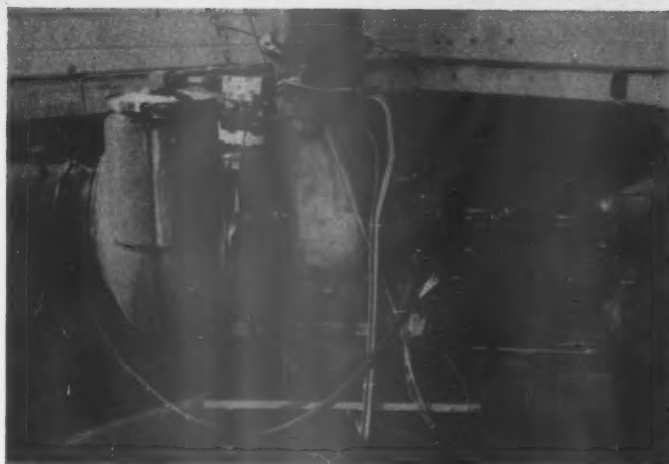
Sources: Gas Appliance Manufacturers Association, National Electrical Manufacturers Association, "Fueloil and Oil Heat," and American Home Laundry Manufacturers' Association.

**GAS SALES TO ULTIMATE CONSUMERS  
BY UTILITIES AND PIPELINES DURING SEPTEMBER, 1961**  
(MILLIONS OF THERMS)

	Month of September			Twelve Months Ending September 30		
	1961	1960	Per Cent Change	1961	1960	Per Cent Change
Natural gas	5,559.7	5,472.6	+ 1.6	91,375.1	90,073.1	+1.4
Manufactured and mixed gas	88.9	97.6	- 8.9	2,299.2	2,302.9	-0.2
<b>Total gas</b>	5,648.6	5,570.2	+ 1.4	93,674.3	92,376.0	+1.4
Residential, commercial, and other	1,751.7	1,544.1	+13.4	47,331.6	45,482.4	+4.1
Industrial	3,896.9	4,026.1	- 3.2	46,342.7	46,893.6	-1.2
<b>Indices (1947-1949 = 100)</b>						
Total gas sales (A. G. A.)	249.2	245.7	+ 1.4			
Residential, commercial, and other (A. G. A.)	239.8	211.4	+13.4			
Industrial (A. G. A.)	253.6	262.0	- 3.2			

**PERTINENT BUSINESS INDICATORS, SEPTEMBER, 1961**  
(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	September			August		
	1961	1960	Per Cent Change	1961	1960	Per Cent Change
Industrial activity, FRB (1947-49 = 100)	169	162	+ 4.3	171	165	+3.6
Consumer prices (1947-49 = 100)	128.3	126.8	+ 1.2	128.0	126.6	+1.1
Housing starts, non-farm (thousands)	123.7	100.6	+23.0	126.7	133.0	-5.0
New private construction expenditures (\$ million)	3,714	3,524	+ 5.0	3,714	3,556	+4.4



Solar's T-350 turbine was adapted to use natural gas fuel in an air conditioning system



The T-350 turbine looked like this in its original design to operate with a liquid fuel



AiResearch division, Garrett Corporation tests its 331 turbine with natural gas as fuel

# Turbines adapted to natural gas

By ROBERT C. KLUTHE

*Research Engineer  
American Gas Association*

In considering the future of gas air conditioning, it can be stated that prime-movers should play a major part in this field.

Let us define more closely what we are dealing with. By prime-movers we generally mean engines or, more precisely, devices for converting the potential energy of a fuel into power which can in turn be used for driving a machine such as a refrigerant compressor. Examples applicable to natural gas are the spark-ignition internal combustion engine, the free-piston devices, the external combustion (Stirling Cycle) engines, the vapor expansion "steam" turbine, and gas turbines. Many present and future varieties of these basic types are of interest to gas air conditioning.

As a foundation of rotary motion, the one invention which really benefited everybody, was the wheel. Nobody knows who invented it, but its benefits are limitless. Rotary motion is, of course, the basis for the gas turbine and its basic simplicity of operation.

As prime-movers, gas turbines have taken a back seat, even though a full-fledged gas turbine made its appearance before Robert Street received his patent for the internal combustion reciprocating engine in 1794. In the last twenty years, however, the turbine engine has

made a remarkable impact as a reliable and acceptable prime-mover for both commercial and military aircraft.

Where do we stand today? The gas industry, among others, is taking a serious look at this exciting prime-mover which is rapidly finding applications for many uses. In jet air travel, a enviable record of dependability has already been established. In the first year's operation, the airlines found their jet engines, when compared with the reciprocating engines, had one-twentieth the failures in flight, and one-eighth the premature removal for overhaul.

This jet engine now has come "down-to-earth" in the form of a more ruggedly constructed gas turbine. A significant number of large sized turbines have logged 50,000 to 80,000 hours. Records of reliability and performance have been made in hundreds of stationary applications ranging from electric power generation, pumping oil, and compressing gas in pipeline operations.

Although the gas turbine has a tremendous potential for many applications in the gas industry, it is not possible as yet to order a dozen gas fueled turbines in assorted sizes and as off-the-shelf items.

To accelerate filling up of this vacuum, the A. G. A. Air Conditioning and Prime Mover Research Committee initiated a cooperative project with Solar (subsidiary of International Harvester Company) in San Diego, California to develop its T-350 liquid fueled turbine for natural gas use in air conditioning and other applications. The performance goals set as a target were:

- Long life capability and minimum maintenance
- One Btu of refrigeration per Btu of fuel
- Packaged unit of smallest practical size
- Acceptable noise level
- Maximum initial cost of \$100 per ton.

With these objectives in mind, several possible configurations were studied. As a result, it was concluded that a gas turbine with waste heat recovery was the most suitable. Higher efficiencies are obtained by cycling turbine exhaust gases through a recuperator preheating air entering the combustion chamber.

A detailed analysis was then made of the adaptation of a Solar Type T-350, 250 horsepower, single shaft radial flow turbine which is coupled to a freon

compression system through a gear reduction step. It was estimated that a cooling capacity of 200 tons would be attainable with this configuration.

At the conclusion of this study, a hardware development program was undertaken. The first phase was initiated in September 1960, and the initial turbine operation on natural gas took place in December. The major areas to be developed, in addition to finding the most economical and reliable recuperator design, relate to long life seals and bearings. These are being designed and tested along with cycle controls.

Studies have revealed that an inline "pin-fin" recuperator offers the greatest cost advantage compared to other designs such as the "wrap-around" type. Use of an inline recuperator provides versatility since it can be readily replaced with an exhaust heat boiler required in applications where steam will be needed.

A prototype T-350 turbine is now being fabricated which will incorporate the inline recuperator; the sleeve bearings (which will have been proven by rig testing); and the combustor and controls system for natural gas operation. At the present pace of development, it is anticipated the prototype T-350 will be running with all the above features by April 1962. The next phase in the program under consideration is an intensive running development to insure long life and low maintenance.

Practically all gas turbines were originally designed to burn liquid fuels. Converting them to gas fuel is not difficult. In fact, turbines are partial to natural gas fuel because of its clean burning characteristics.

Gas-fueled turbines, however, do demand moderate gas line pressures for operation. Pressure requirements, which range from 60 to 180 pounds per square inch, therefore, will often necessitate the use of gas boosters.

In modifying the T-350, Solar is considering the incorporation of a drag pump gas pressure booster of its own design into the turbine. The gas pump is designed to rotate at engine speed and is mounted between rotor and output gearbox. The pump increases pressure from supply pressure to 60 psia in the combustor. In addition to the drag pump, other types of gas pumps are being investigated, including vane pumps,

(Continued on page 18)



## Safety stars in new film





Scenes from the filming of **WARN, GUIDE, PROTECT**: Above, director setting up the cameras and crew. Right, stages in setting up work area protection



What does a gas distribution man think about when he lifts his head from a roadway excavation and sees a truck bearing down on him?

A film he has seen recently?

Probably, if the picture was *Warn, Guide, Protect*, a new 35 mm color, sound slide film, now available from A. G. A., illustrating proper work area protection for gas servicemen in hazardous traffic areas.

According to Joseph G. Lambert, director of safety, Northern Illinois Gas Company, and chairman of the A. G. A. Accident Prevention Committee's Distribution and Utilization Subcommittee, the film should be valuable not only for that crewman in the excavation, but particularly for his distribution department

superintendent.

Mr. Lambert stated that *Warn, Guide, Protect* should provide an excellent opportunity for a superintendent to compare his company's work area protection practices with the examples shown in the film.

The 14 minute film, prepared by the A. G. A. Accident Prevention Committee in cooperation with the R. E. Dietz Company of Syracuse, N. Y., stresses the concept of setting up work area protection in three phases. Throughout the film, "to warn" shows the use of high level early warning flasher lights and flags, "to guide" shows the use of cones and suggests the use of flags, and the "to protect" aspect shows how barricades, trucks, heavy equipment and spoil

banks give added protection to distribution personnel exposed to the hazards of city or highway traffic.

The film begins with Joe, who is in charge of a gas company distribution crew, having a typical home "incident" prior to leaving for his job. The story follows Joe on a typical working day.

The film ends at Joe's home with Joe practicing "off-the-job" safety. His son is imitating the work of a gas serviceman in front of Joe's home and has neglected to set up protection for his work area. Joe remedies that situation.

The film is available on loan without charge from the Film Library, American Gas Association, 420 Lexington Avenue, New York 17, N. Y. A 35 mm sound-slide projector is required for projection.

## Third Marketing Research Seminar sets attendance record

**G**as companies are increasingly interested in the applications of marketing research and allied research techniques in utility operations. Capacity attendance at the Third Marketing Research Seminar for Gas Utilities demonstrated this, as a record one hundred twenty-five utility people registered at the conference held in Chicago October 19 and 20 under the sponsorship of the A. G. A. Marketing Research Committee.

"Marketing Research to Gain Profitable New Customers" was the theme of the first session. F. L. Gagné, research director, Northern Natural Gas Company, summarized a study of growth trends and population shifts in utility service areas, while Bernard Wittmann, vice president, The Peoples Gas Light and Coke Company, emphasized sales strategy considerations in a changing urban market. Research as a guide to main extension policy was the subject of discussion for H. W. Collister of

Southern California Gas Company and Louis Sperber of Equitable Gas Company.

Marketing research is useful also in appraising the competitive situation, as two speakers demonstrated. Daniel Parson, manager of Economic & Rate Research, Northern Illinois Gas Company, outlined a method of evaluating the impact of electric heating competition. Frank Saponaro, H. Zinder Associates, explained the determination of gas pricing in competitive markets.

Harry Parlette, system engineer, Long Island Lighting Company, and B. P. Dahlstrom, Public Service Electric & Gas Company, pointed up the overlap between load research and other forms of business research and explained how load study data are used in company operation for greater profit.

The expanding horizons of research were the subject of the final session of the meeting. Richard Baxter, vice presi-

dent-director of research, Cunningham & Walsh, Inc., and Leonard Kent, who holds the same positions with Needham, Louis and Brorby, Inc., explained the most modern developments in advertising effectiveness measures. The vital place of market research in promoting good customer relations was expounded by John Hollingsworth, assistant vice president of Iowa-Illinois Gas and Electric Company.

A finale for the two-day meeting was provided by C. S. Stackpole, who urged the assembled researchers to develop the market potential for the gas home of 1970.

The official proceedings of the Third Marketing Research Seminar for Gas Utilities will soon be sent to all registrants. A limited number also will be made available to non-registrants at \$5 a copy. Orders may be sent to the Order Department, American Gas Association; please indicate catalogue number 75/S.

### Meet your Association staff



Hope Deegan

Hope Deegan, educational service counselor, after eight years at A. G. A., has definitely decided on a lifetime career in the gas industry.

The story behind this momentous decision begins in Cranford, N. J., where she was born. Hope spent a year in what used to be the "wilds" of New Jersey, in the days before the super-highway, and then jour-

neyed with her parents and older brother to the far northern part of the Bronx. After a few years the Deegans moved still farther north, to White Plains.

Hope attended local schools in Westchester County, including Our Lady of Good Counsel College for two years. Then she switched to the School of Journalism at Syracuse University, still farther north in Syracuse, N. Y. in the heart of the state's snow belt.

After two years of study there, with winters devoted to looking at "cold blue people," and summer vacations devoted to work on a weekly paper in White Plains (a high spot of her early journalism career was a personal interview with Tommy Manville), Hope received her degree and landed a job as society editor for the Binghamton Sun in Binghamton, N. Y. For a year it was a mad whirl of women's teas, engagements, weddings and club meetings for Hope.

Then Hope headed for New York. She lived with her parents in White Plains and commuted to a new position as assistant to the director of consumer public relations at the Reynolds Metals Company. Hope helped Reynolds sell the public on

the value of aluminum foil until 1953, when she joined A. G. A.

Since then she has worked on selling gas to future homemakers, and has handled the premiums and printed material program of A. G. A. Hope recently has worked with the Educational Service Committee of A. G. A. on the many details involved in telling the story of the gas industry to teachers and students throughout the country.

For the past few years, since her parents abandoned their northward movements in favor of Florida, Hope has been living in her own apartment in Manhattan. Now she is ready to make her own move south.

On December 19, she is leaving A. G. A. to join her folks in Marathon, Fla., in the Florida Keys.

Her gas industry career?

On the day after Christmas, Hope will take on a new job. She plans to become life-time, permanent assistant to Leonard Hammer, sales promotion manager for Hardwick Stove Company, and former manager of the A. G. A. Gold Star Appliance Program.

After the two ex-A. G. A.ers are married on December 26, it will be southern living for them in Cleveland, Tenn.



Men, women and children come running to Texas Gas' "Gas Light Carousel," above. Below, two Ohio Gas Company employees make a gaslight sale while ringing doorbells



## Gaslight sales go merrily on

**O**ld and new sales ideas are selling gas lights in record numbers.

Recent efforts in gas light promotion by companies large and small have featured techniques from the tried-and-true method of doorbell ringing to use of a gaily decorated, gas-illuminated mobile "Carousel."

Door-to-door canvassing by employees with old-fashioned enthusiasm for a quality product sold 440 gas lights (a total which represents 33.1 lights per 1,000 meters) in a single day at Ohio Gas Company; 6,585 lamps in one day for Oklahoma Natural Gas Company; and 10,419 gas lights for The Gas Service Company of Kansas City, Mo.

Lone Star Gas Company acquired

6,000 new gas light customers in one day, and Western Kentucky Gas Company's one-day campaign made 1,263 people the pleased owners of gas lights.

An ingenious new method to call attention to gas illumination has been devised by Texas Gas Transmission Corporation. The pipeline company's sales and customer relations departments hit upon the idea of building a mobile gas light display to show various models of gas lights.

After making arrangements with Arkansas Louisiana Gas Company to furnish gas lights for the display, the sales department set out to convert a half-ton pick-up truck into a gas light truck modeled after an old-fashioned carnival ride.

Between other company jobs, the employees of Texas Gas' transportation, art, and communications departments pooled their efforts to build, paint and equip the truck with a loud speaker system in less than two weeks' time.

Plans were to use the truck primarily in conjunction with gas light sales campaigns staged by Texas Gas' customer companies.

The Gas Light Carousel was still under construction when officials of the Jackson (Tenn.) Utilities Division, Gas Department first heard of it and requested its use during their gas light sales campaign.

*(Continued on page 22)*

# Third quarter accidents down 20.9%

**A**ccident data for the third quarter 1961, reported by the A. G. A. sample group of 83 gas utility and pipeline companies, indicate that the gas industry experienced fewer disabling injuries than occurred in the same period last year. The frequency rate (number of disabling injuries per million man-hours of exposure) for the sample group of companies was 5.46 during the current quarter. Percentagewise, this represents a decline of 20.9 per cent from the frequency rate of 6.90 for the third quarter 1960.

During the past three years, the third quarter has shown itself to be the most hazardous quarter to the gas industry employee. This year, however, the third quarter was only 2.0 per cent higher than the leader in safety.

Third quarter 1961 accidents resulted in an average severity rate of 257 days lost per million man-hours, a very sub-

stantial 46.5 per cent lower, or 223 days less than the 480 days lost per million man-hours worked during the third quarter 1960. This decrease is primarily due to the reduction in fatalities and the disappearance of permanent partial disabilities as an injury-type during the current quarter.

Supplementary vehicle data were reported by 66 of the sample companies. These companies indicate that gas industry vehicles were involved in 1.13 accidents per 100,000 miles traveled during the third quarter of 1961. The rate of motor vehicle accidents during the third quarter of each year has been consistently at the lowest point.

Cumulative data for the first nine months of 1961 indicate the gas industry will establish, for the fourteenth consecutive year, another record low.

The frequency rate of 5.77 disabling injuries per million man-hours of ex-

posure during the first nine months of 1961 represents a decline of 9.4 per cent from the frequency rate of 6.37 recorded during the first nine months of 1960. The total days lost due to disabling injuries during the first nine-month period of 1961 decreased 12.7 per cent from the same period last year, dropping from 434 days lost per million man-hours of exposure to 379 days lost.

During the first nine months of 1961 the frequency of vehicle accidents was 1.31 per 100,000 miles traveled. This represents a decrease of 5.8 per cent from the same period of 1960. Based upon the continued reduction shown in the rate of vehicle accidents during the three quarters of the current year when compared with each respective quarter of the previous year, it appears that the gas industry will also improve its annual frequency of vehicle accidents over the last year.

**GAS EMPLOYEE ACCIDENT EXPERIENCE**  
Nine Months 1961

	Annual 1960	First Quarter (Sample)		Second Quarter (Sample)		Third Quarter (Sample)		Nine Months (Sample)	
		1961	1960	1961	1960	1961	1960	1961	1960
Number of reporting companies	554	83	83	83	83	83	83	83	83
Average number of active employees	195,591	76,306	75,931	76,707	77,047	76,933	77,542	76,649†	76,846†
Number of injuries									
Fatality	23	2	1	2	2	1	2	5	5
Permanent total disability	0	0	0	0	0	0	0	0	0
Permanent partial disability	92	3	6	2	4	0	5	5	15
Temporary total disability	2,642	236	220	197	238	208	262	641	720
Total	2,757	241	227	201	244	209	269	651	740
Days charged									
Fatality	138,000	12,000	6,000	12,000	12,000	6,000	12,000	30,000	30,000
Permanent total disability	0	0	0	0	0	0	0	0	0
Permanent partial disability	32,861	490	1,665	695	4,245	0	2,237	1,185	8,147
Temporary total disability	50,688	3,821	3,463	3,963*	4,411	3,853	4,458	11,637	12,332
Total	221,549	16,311	11,128	16,658*	20,656	9,853	18,695	42,822	50,479
Frequency rate	7.01	6.51	5.96	5.35	6.25	5.46	6.90	5.77	6.37
Severity rate	563	441	292	441*	529	257	480	379	434
Vehicle accident statistics									
Average number of employees	178,456	70,712	71,804	68,995	72,289	69,472	69,968	69,726†	71,354†
Number of vehicles	46,429	19,460	21,121	19,649	21,304	19,721	19,393	19,610†	20,606†
Vehicle miles traveled (000)	541,969	58,073	58,402	60,798	61,954	61,289	57,172	180,160	177,529
Number of reportable accidents	7,269	941	1,029	734	774	690	656	2,365	2,459
Number of personal injuries	185	39	54	39	33	26	23	104	110
Accidents per 100,000 miles traveled	1.34	1.62	1.76	1.21	1.25	1.13	1.15	1.31	1.39

\* Revised figures.

† Average of first, second and third quarters.





Winter strollers may think it's Minnegasco's warm smile, but heat really is coming from gas infra-red heaters overhead. Below, "spring" fashion show at 32 degrees



## Minnegasco beams, warms passers-by

The temperature was just at the freezing mark as several hundred persons gathered outside Minneapolis Gas Company in downtown Minneapolis for a fashion show.

Comfortably bundled spectators saw 10 of the city's top fashion models parade down the 36-foot elevated runway set up on the sidewalk. Two attractive young ladies—one a local television personality, the other Miss Downtown Minneapolis—described the summery outfits—sheath dresses, short jackets, pillbox hats, straw handbags and the scores of other clothing items and accessories that make up milady's wardrobe.

This was the finale of Fashion Week in Minneapolis last spring, a cooperative project of leading women's fashion retailers and other business firms.

It was also the general public's dramatic introduction to Minneapolis Gas Company's 165-foot long canopy with

gas-fired infra-red burners. The canopy has 36 burner units and it's believed to be the largest installation of its type anywhere.

The canopy with its unique pedestrian warmer was the finishing touch on the gas company's extensive remodeling program, which also included a completely revamped open display floor of gleaming new gas appliances and an air door.

Principal item of customer conversation this winter, though, is the canopy. It sets out eight feet from the building and burners are mounted 10 feet above the sidewalk.

The sidewalk heater installation is fed by four gas lines which have solenoid valves on each. A push button controls each gas line valve so there are many variations of the quantity of heat available merely by pushing a button.

Gas pressure is 2.0 psi or less and the ignition is supplied by 18 ignition trans-

formers. Two modulating valves also control the amount of heat by thermostatically sensing the outdoor-plus-heater temperature and then varying the gas pressure.

Each of the 36 heaters has an input of 48,000 BTU per hour at 2.0 pounds pressure. The units were made by Perfection Industries.

Infra-red heat is generated by forcing natural gas through a thin perforated ceramic mat. As the gas burns in the tiny holes—200 to a square inch—the infra-red heat is generated and then radiated to the surroundings where it heats objects, not the air.

Before the downtown installation was put in, a pilot model was built and tested by the company's industrial sales department, in cooperation with several other departments. The test run suggested some changes which were incorporated into the downtown installation.

(Continued on page 22)



# Industrial relations round table

Prepared by

A. G. A. Personnel Committee

Edited by W. T. Simmons

Assistant Personnel Manager  
Philadelphia Electric Co.

● **Three ways to cool a hot temper**—In the October issue of *Your Life*, Jean Z. Owen stated that if you have an authentic, hair-trigger, roman candle temper, you are probably already aware that resolutions, however good, are not very effective in helping to control it. Three suggestions are offered to help:

(1) Whenever possible, put some distance between yourself and your offender. You'll be amazed how fast you can cool off, once you are out of firing range.

(2) Stop being proud of your temper. There is a natural tendency to beg off responsibility for blowing your top. When you insist that you "can't help" having a low boiling point you are voluntarily handcuffing yourself to a trait that can bring lots of grief and no real pleasure.

(3) Look at your temper as others see it. A peppery personality is not a sign of strength or individuality—it often signifies inner conflict, insecurity, and a fear of being rejected by others.

When such a person succeeds in breaking the temper habit, it is a break for his friends as well as himself. Ex-hot-heads are wonderful, warm, loyal people, and they usually have an extra measure of initiative and enthusiasm to give their personalities spice and magnetism.

● **How to spot and spark a go-getter**—Dr. Eli Ginzberg stated in the April issue of *Nation's Business* that American business needs young men with initiative and drive, but too often the ambition and ability of such men are blunted by inflexible management policies. He presents some steps to be considered to assure that the potential of young "go-getters" is recognized and developed.

Watch your hiring practices. Don't set up a "model" which every applicant must live up to. Whenever possible, give a man a chance to prove himself by actual work.

Don't ruin a man's creative capacity by over-indoctrination. There is no better way to kill initiative than to warn a man constantly: "This is the way we always do things here."

Keep an eye on capable people. Don't let the "system" bury men with initiative in dull or no-exit jobs. Keep them supplied with challenging and difficult assignments.

Ask for volunteers. When there is a tough job coming up, or one that offers special hardships, watch the volunteers carefully. These are the men who are willing to take a risk.

Keep the ranks thin. A lean and hungry

organization doesn't waste time, money or initiative. It provides a climate where good people must work hard but are rewarded by being able to move ahead fast.

● **The pointless tragedy of tiredness**—The doctor confirms that there is nothing organically wrong with you. But you feel tired, washed out. H. S. Benjamin, M.D. stated in the April issue of *Pageant* that it is time to check yourself against these five known fatigue factors: 1) Do you live or work under oppressing physical conditions—noise, heat, poor light or ventilation? 2) Do you consistently wear clothing that is too tight, too heavy? 3) Are you known as a perfectionist? Or are you slovenly? 4) Do you worry too much? Too little? 5) Do you habitually overindulge in something—smoking, drinking, sleeping, saving, spending, excitement?

These areas, like holes in a buried water main, are where emotional and physical energy can drain away, leaving you exhausted without knowing why. It is vitally important that you plug these holes, because research shows that chronic tiredness is an invitation to both physical and mental disease. It has been tabbed as the cause of more than half of all serious traffic accidents. It is behind injuries suffered during strenuous sports, and is a frequently encountered factor in acts of violence, and even divorce.

Tired? Don't look for a "pep pill" solution. Look for a hidden "leak" that is sapping your natural store of energy.

● **Court decision—veterans' rights**—Lay-off is nothing but a polite term meaning that the employee is out of a job, as this lawsuit brought by an ex-soldier makes very clear.

The employee was laid off. He had recalled rights, but before he was recalled, he entered the armed services. The day he was "recalled" he was pushing snow around for the army in Alaska. When he was released, he went back to work for the company with seniority dating from his latest employment. He argued for seniority dating from his first employment. Said he: "The Universal Military Training and Service Act requires an employee to be restored to his seniority if he has left or leaves a position to enter military service."

But said a federal district court: "A worker so laid off is not carried on the payroll, is not subject to supervision by his former employer, is under no obligation to it, is a free agent, and has the right to accept employment elsewhere, without notice to his former employer. In simple parlance, the plaintiff was out of a job at the time he enlisted."

He was not in the employ of the company when he went into service.

● **Arbitration decisions**—Arbitrator upholds employer's claim of right to select when seniority is equal—A decision by the Columbia Broadcasting System to withhold from layoff one of four technicians with equal seniority records produces a union complaint for some objective test to break a seniority tie. Arbitrator Israel Ben Scheiber says, however, it is up to the parties to devise such a test and dispose of the union grievance with an award in favor of CBS.

The employer selected one of the four technicians to remain on the payroll because of his particular ability as a film cutter and the company's need for technicians having this particular skill. Its position is that, where the seniority of several technicians is equal, under the contract with Local 1212 of the International Brotherhood of Electrical Workers, CBS properly may base its determination on such factors as the technician's ability and the needs of the company.

Local 1212 rejected this contention, claiming this would allow ability and need to intrude on the basic concept of uniform classification for all technicians and a single seniority list. The arbitrator concludes:

"It is commonly recognized that management has the right to direct its working forces, except to the extent that it has given up that right. On the facts here existing, it has not bargained away its rights to select one technician out of several having equal seniority."

"So, too, its selection of one whose particular skill in the complex of skills which technicians have, it most needed, cannot be regarded as arbitrary, unreasonable, or capricious."

Local 1212's grievance over breaking seniority ties reached arbitration with what the arbiter calls "unusual celerity" shortly after the union was advised that CBS would give notice of layoff to 42 of its New York technicians. The grievance is based on the fact that technicians August Beck, Vincent Bartilucci, Philip Vaccaro, and Howard Purnick had the same seniority date, December 6, 1954. But Mr. Purnick was not given a layoff notice, because the company wanted to retain his skill as a film cutter.

The arbitrator states that, since the CBS contract with Local 1212 is silent on how to break a tie in seniority, the union came forward with its own idea of a proper criterion in such cases. The union noted that the three technicians slated for layoff had prior employment with CBS-Columbia,

(Continued on page 22)



New medal, below, succeeds two previous emblems for resuscitation award founded by Thomas N. McCarter, left



## Lifesaving medal rules revised

The McCarter Medal, awarded to a member of the gas industry who saves a life through application of an officially approved method of artificial respiration, has been given a new design and new requirements for award.

Since new resuscitation techniques have been introduced over the past few years, and since the widespread use of non-toxic natural gas had resulted in a decline in number of medals awarded, the A. G. A. Accident Prevention Committee Awards and Contest Sub-Committee was asked to review the award prerequisites.

After deliberation, the subcommittee recommended that the eligibility requirements of the medal be expanded. "Successful resuscitation by a recognized approved method following asphyxiation by any cause" would be granted an award. The only other stipulation suggested was that "the gas company em-

ployee must be in pursuit of his company's business at the time, except in cases involving asphyxiation by gas."

The new requirements and a revised application blank were overwhelmingly approved by the A. G. A. Accident Prevention Committee by letter ballot in the spring of this year. This followed the earlier presentation of the proposal to the entire committee at its Minneapolis meeting in September, 1960.

The new design on the medal shows a single flame (the historic symbol of life). Around the lower half of the medal are the Latin words: "Flamman vitae sustinere per resuscitationem," which translates: "The flame of life is maintained through resuscitation."

Originally the medal had been designed as an award to "each employee of a member company who is successful in resuscitating a fellow employee of a member company from gas asphyxia-

tion." It was established by A. G. A. in 1924 as a result of the safety consciousness of Thomas N. McCarter, president of the Public Service Company, Newark, N. J. Mr. McCarter had offered to donate medals for resuscitation to be awarded by the A. G. A. Accident Prevention Committee.

The award was made retroactive to 1923, and since that time 888 medals and 52 bars (given in lieu of another medal to an individual for repeated successful resuscitations) have been awarded to gas industry personnel.

Mr. McCarter said at an A. G. A. convention in the 1940's that his purpose in establishing the award was to encourage all gas people to save human lives by learning the prone-pressure method of resuscitation.

"I like to think that the original purpose of the so-called McCarter medal has been realized," he said. "It is natu-



rally a matter of great pride to me that the award was the official recognition in the gas industry for the highest form of service any man can render—the saving of human life.”

In May, 1954, the A. G. A. Accident Prevention Committee formally endorsed the then new method (Back-Pressure, Arm-Lift) of artificial respiration recommended by the National Academy of Sciences, National Research Council.

This action required a change in the McCarter medal, if it was to be continued for asphyxiation by gas. The

matter was discussed with Mr. McCarter, who had retired after a long and distinguished career as president and chairman of the Board of Public Service Electric and Gas Company, and a new application form and medal were prepared and approved by the Committee.

Since then, the National Academy of Sciences has declared the Mouth-to-Mouth technique to be the most practical method of artificial respiration, and has recommended its use in most cases requiring emergency ventilation.

In view of this recent development, the Accident Prevention Committee ac-

cepted the new technique and endorsed it for industry-wide practice. Existing publications on the subject of resuscitation were revised and a new booklet entitled *Resuscitation* was published in 1959.

The next step was an adjustment of the requirements for the McCarter Medal.

Now the gas industry has a new medal for successful application of artificial respiration, but the medal still has its original name and its original intent of official recognition for gas industry personnel who have saved a life.

## Turbines

(Continued from page 10)

centrifugal compressors, and screw-type pumps.

It appears that long periods of operation without maintenance and several seasons without major overhaul, are reasonable for normal operating conditions. A top temperature in the turbine of about 1400°F will aid in long life and reliability without any substantial sacrifice in over-all efficiency. Enthusiasm is very high in regard to the potential of this equipment for office buildings, apartments, hospitals, and schools.

In addition to these applications, a large potential market exists for turbine prime movers in smaller horsepower size; e.g., 5-50. Scaling down existing designs to these smaller sizes, however, results in extremely poor efficiencies. These could be increased by using high temperature resistant materials which at present are extremely expensive. Entirely different turbine design approaches are necessary for residential and small commercial applications envisaged (cooling, heat pumping, etc.).

For industrial applications, the importance of power generation coupled with exhaust heat for cooling and heating is becoming apparent to many utilities as they study the economics. One installation has been made and a significant number are in the planning stage right now.

Some include high frequency power generation. But why use frequencies higher than 60 cycles? For one thing, a 400 cycle motor weighs one-fourth as much as a 60 cycle motor of equal horsepower. Another advantage of high frequency electricity is that fluorescent lighting fixtures give more light with

the same wattage input. Fluorescent tubes can be loaded up to 140% of their normal wattage rating and they will still have a longer life than on 60 cycles. A number of installations have already been made using 400 and 840 cycle power. Voltages usually run 440 to 550 in these systems. This type of arrangement eliminates the need for conventional ballast and starters in the fluorescent fixture and concurrently the air conditioning load is reduced because less heat is emitted without the ballast.

In many modern buildings, the lighting and air conditioning load coincide, thus when the turbine is used to furnish power for lighting the recoverable heat can be used for absorption refrigeration with no diversity factor.

In addition to the Air Conditioning and Prime Mover Research Committee's project with Solar, a cooperative project also was undertaken in August, 1961, with Alco Products Incorporated, to develop, test and demonstrate a 400 horsepower turbine. This turbine is the two-shaft type and will have a recuperator. Basically an industrial design, the Alco turbine is expected to be capable of extremely long life and very low cost per horsepower.

### Basic configurations

Gas turbines are of several different configurations. They may be either single-shaft or double-shaft design with or without recuperation.

No definite pattern is apparent for the single- vs. double-shaft design. More efficient handling of variable speeds and loads and less power requirements for starting favor the double-shaft type. However, satisfactory performance on many applications and lower first cost make the single-shaft unit the logical

choice for such a large number of installations that this type cannot be ignored.

Other factors weigh heavily in a decision to use either the single or double-shaft unit. A complete analysis of the load characteristics by hours throughout the year is necessary. This load analysis should be related to corresponding outside air temperatures because the compressor capacity and turbine efficiency are affected by the temperature of the inlet air. The use of an open or regenerative cycle turbine also influences the decision to use single or double-shaft designs.

Insofar as bearings are concerned, double-shaft turbines usually have at least two more bearings than the single-shaft models. With either type, the turbine and compressor wheels and bearings should be designed for 100,000 hours of equivalent full load life. Combustor liners and miscellaneous operating accessory parts should be designed for a 10,000 to 20,000 hour minimum life. As an example of where we stand now, combustor liners in pipeline compressor turbines are presently giving upwards of 30,000 hours of service without replacement.

Over the last few years, more and more turbine manufacturers are realizing the potential for natural gas burning turbine equipment. Some of these companies manufacturing and developing equipment in sizes below 1500 horsepower include: AiResearch; Alco; Allison Division of General Motors; Boeing Company; Cooper Bessemer (in collaboration with Pratt and Whitney Aircraft); Ford; General Electric; Orenda; Ruston and Hornsby, Ltd.; Solar; and Waukesha Motor Company (in collaboration with Williams Research Corporation).



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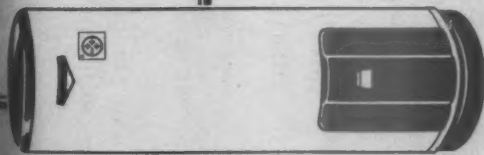
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# GAS



Bathing, laundering, dishwashing, showering, shaving . . . a family gets all the hot water it needs, *from a Gas water heater*. Gas heats water instantly! No time wasted warming up. The instant more hot water is needed, Gas comes on full force, *automatically*! A Gas water heater costs less to buy, less to use. Stop in and see how dependable, fast and economical a water heater can be—when it's Gas!

Whether remodeling or  
building . . . look  
for this sign of value



## COMPANY NAME



ANOTHER EXAMPLE OF HOW TODAY'S STEELS LIGHTEN YOUR WORK, BRIGHTEN YOUR LEISURE, WIDEN YOUR WORLD

USS-AQ-AH-12-61

This newspaper ad is all ready to go to work helping you sell more water heaters.  
Available in two sizes: 4 col. x 150 lines (shown above) . . . and 2 col. x 75 lines  
(3 3/4" x 5 3/8").

(See next page)

# MORE HOT WATER... FOR LESS... with modern GAS



Whether remodeling or building . . . look for this sign of value



Bathing, laundering, dishwashing, showering, shaving . . . a family gets all the hot water it needs, from a GAS water heater. Gas heats water instantly! No time wasted warming up. The instant more hot water is needed, Gas comes on full force, automatically! A Gas water heater costs less to buy, less to use. Stop in and see how dependable, fast and economical a water heater can be—when it's Gas!

## COMPANY NAME



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USS-AGAM-13-61

Ads may be used as you see them or combined with elements from previous ad mats. You can change them, if you wish, by adding your own headlines and pictures.

Your newspaper advertising representative can help you utilize mats in a variety of interesting ways. He will be glad to help. You prepare your ads in any style you prefer!

Please send the free ad mats (Cat. No. AGAM-12-61-Water Heater) featured in the December issue of the A. G. A. Monthly for use in selling more Gas water heaters.

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

Return this form to: Order Department, A. G. A.  
420 Lexington Avenue, New York 17, N. Y.



*Unless we allow for technological change,  
we may find ourselves shortchanged in the future*

# Depreciation—or obsolescence?

By OTIS E. SMITH

*Baltimore Gas and Electric Company*

I firmly believe that the rates of depreciation presently used by electric and gas utilities are inadequate to recoup the investment in property over its life.

Why do I feel this way? Because present depreciation rates are based largely on hindsight and the resulting estimated life expectancy of property gives little recognition to the fast moving technological and other developments that are tending to speed the retirement of property because of obsolescence or inadequacy.

We spend a great deal of manpower developing life studies of our plant and equipment based on past history. When we are through we have a mathematical answer as to how long this type and that type of property should last based upon wear and tear, obsolescence and inadequacy experienced in past years. From these findings, coupled with some judgment with respect to recent experiences and the lives of new types of property for which we have no past experience, we set depreciation rates to be applied to present, and often to future property. So, to use the vernacular, we are applying "horse and buggy" depreciation rates to recoup our depreciable property investment in this age of spectacular technological and economic changes.

Probably the biggest deterrent to the use of foresight in setting adequate depreciation rates for our business is the belief, not only among ourselves but also among regulatory and tax agencies, that the products we serve are absolute necessities of modern living insuring a glorious future of growth without fore-

seeable end. I share the view that our future is bright, but I believe it will be even brighter if recognition is given to recoupment of our investment while our star still shines. History shows how fickle the consumer can be when someone builds a "better mousetrap." Numerous industries which in their day were considered as "growth situations" and rated as "blue chip" are now either gone or struggling to keep the sheriff from the door. Some are now faced with stiff competition and find it difficult to support a burdensome capital investment that might have been much lower had adequate depreciation been taken in earlier years when business was better.

Let's take a look at the railroads—an outstanding example of a one time "growth industry" and, generally, a "blue chip" investment. They were in this position when the automobile and the airplane were invented. They noted the use of trucks for local hauling jobs. They saw the rapid improvement and increasing reliability of these machines and noted the consumer's demands for better roads. These were all interesting developments but of small concern to the railroads—the "backbone of America's transportation system." Earnings were good—the future was bright. But the airplane developed into great air lines serving all major cities of the country. The motor truck developed into transcontinental bus and truck lines, while the passenger car became the preferred way for much of America to travel. In addition, it became necessary for the railroads to modernize and turn to new types of locomotive and rolling stock to meet the onslaught of this fierce competition. The result—today many of the railroads are in sad financial shape

and find it tough going to meet competition and impossible to provide an adequate return for the present investors in the business.

Without going into detail, the street and interurban railways were the victims of the same kind of competition.

Now, what has this to do with depreciation rates? Just this—because of the developments previously related, a substantial portion of railroad equipment and property came to the end of its useful life much earlier than anticipated—not because it was worn out but because it had become obsolete or inadequate. But the railroads, while they were still strong and in good financial condition, did not give recognition to the developments that were tending to shorten the life of their facilities and did not charge their customers for depreciation based on the shorter life actually experienced. Consequently, they didn't adequately recoup their investment while the chances of recoupment were good. Now, because of competition, they can't charge customers enough to adequately support the large capital investment remaining. If, on the other hand, the railroads had charged their customers enough to recoup their investment over the shorter period, they would today be in a better position to support a reduced capital investment and to meet competition price-wise.

But, you may say, there is no similarity between the electric and gas utilities and the railroads. We don't have the stiff competition for most of our business that they do, we are showing good earnings and tremendous future growth is predicted. All this is true. It was also true of the railroads when the automobile, truck and airplane industries were

in their infancy.

Here is an excerpt from an article appearing in the July-August 1960 *Harvard Business Review*:

"... The prosperity of electric utilities continues to wax extravagant as the home is converted into a museum of electric gadgetry. How can anybody miss by investing in utilities, with no competition, nothing but growth ahead?"

"But a second look is not quite so comforting. A score of nonutility companies are well advanced toward developing a powerful chemical fuel cell which could sit in some hidden closet of every home silently ticking off electric power. The electric lines that vulgarize so many neighborhoods will be eliminated. So will the endless demolition of streets and service interruptions during storms. Also on the horizon is solar energy, again pioneered by nonutility companies.

"Who says that the utilities have no competition? They may be natural monopolies now, but tomorrow they may be natural deaths. . . ."

Perhaps the author in this instance has overdramatized the situation to make his point but, nevertheless, the point is valid even though probably not as imminent as he would suggest. However, there are other developments and trends already at work that could be substantial factors in reducing the useful life of electric and gas facilities and, hence, require the collecting of higher depreciation rates from our customers if we are to adequately recoup our investment:

1. The tremendous growth in demand for our services is forcing the early retirement of low capacity equipment because of inadequacy. In my own company's area we are continually replacing lower capacity unit substations with larger ones and have entered into a long-range plan of converting a large part of our area from 4,000 volt to 13,000 volt distribution because of load growth.

2. Large interconnected systems make the use of bigger and more efficient units feasible and hasten the retirement or limited use of smaller, less efficient units.

3. Exploding population in suburban development areas is bringing demands to eliminate unsightly overhead lines and replace them with underground facilities.

4. Urban redevelopment, slum clearance, freeways and other projects required to put new life into downtown areas and huge road building programs

in outlying areas are having their effect on the life cycle of utility facilities.

5. Further development of coal pipelines could make much of our present coal hauling equipment obsolete.

6. Nuclear power is definitely on the horizon and could become economical in more areas faster than we now think.

7. Soap manufacturers are producing detergents which will wash clothes satisfactorily in cold water. General acceptance of this product could substantially diminish customers' use of electricity and gas for heating water.

8. Many industrial uses of gas are already in stiff competition with other fuels. Further increases in gas costs could cause the loss of a substantial amount of this business and hence the retirement of facilities to serve it.

9. Natural gas reserves do have a point of exhaustion.

I could name many more items, but the foregoing should be enough to make the point that there are forces now at work that are tending to shorten the lives of our facilities.

### A differing view

At the Utilities' Accounting Conference last year, Maurice Scharff presented a paper on this same subject. He made his usual thorough and scholarly report but arrived at the conclusion that obsolescence must be "known to be in operation" to be useful as a basis of adjusting depreciation rates. He cited nuclear fission, nuclear fusion, direct conversion of heat to electrical energy, fuel cells, solar cells, gas turbine and diesel peak load generators and extra high voltage transmission lines and proceeded to demonstrate that none of these developments has reached the stage that they can now be considered as "known to be in current operation" as a cause of obsolescence. At this year's Accounting Conference, Mr. Scharff again confirmed his previous conclusions.

If we were to accept Mr. Scharff's version of the problem, we would seldom, if ever, get recognition of future obsolescence in the determination of depreciation rates until the forces creating the obsolescence had developed to such an extent that it would be too late to achieve the desired recoupment of investment. The fact of the matter is that we do know there are forces at work that will cause future obsolescence or inadequacy, and now is the time to take corrective measures. Mr. Scharff recognizes the need for an additional pro-

vision for depreciation but he would set it up as a contingency. I have yet to hear of a commission that would allow a contingency for rate making. Unless we can collect the additional depreciation from the ratepayer it is no good to us.

When I first broached this subject at a Depreciation Accounting Committee meeting, I had the temerity to refer to the possibility of the exhaustion of natural gas supplies. The representatives of the gas industry expressed alarm at my having even voiced such a possibility and that this was a very "hush, hush" subject. They told me that advocating higher gas depreciation rates for this reason would cause investors to shy away from gas securities. I personally do not believe this argument to be valid. Instead, I believe investors would recognize it as the prudent thing to do and would applaud management for its foresight in getting more return of capital while the getting is good.

The value of our products is still far in excess of the price received. The additional amount of depreciation that we would have to charge our customers to obtain some recognition of future obsolescence and inadequacy would add but little to the average customer's bill. We can sit smugly by, glorying in the present affluence of our industry or we can advocate and fight for what the prudent investor would expect a prudent management to do to protect his investment. I think we should do the latter.

I want to make it clear that the additional depreciation about which I have been talking should not be confused with the liberalized forms variously referred to as price level, current cost, accelerated, etc. The kind of depreciation adjustment that I am advocating is simply the recognition of another factor that should be considered in determining the basic depreciation rates to which the liberalized forms are supplementary. After all, a 3 per cent composite rate means an average of 33 years of life for all kinds of property and it is very doubtful if this is high enough to cover plain physical depreciation alone, let alone an allowance for obsolescence.

In conclusion, we have reached the point where our hindsight depreciation is inadequate under present day conditions and steps should be taken to collect the proper depreciation from our customers or our investors may wake up some day to find they have been shortchanged.

# Seminar studies personnel problems

**M**ore than 170 gas industry representatives heard a variety of personnel topics aired at an all-day seminar in Philadelphia, Pennsylvania, on November 2.

Sponsors of this third annual meeting were the Pennsylvania and New Jersey Gas Associations in conjunction with the A. G. A. Personnel Committee and the Pennsylvania Natural Gas Men's Association.

Subjects covered by a highly qualified group of speakers included state aid for management; modern techniques in selection and placement of personnel; fads and facts in employee communications; and control of employee absenteeism.

Welcome was extended by PGA President John Geesey of York County Gas Co. to the group representing 35 companies from 12 different states.

The morning session was presided over by Walter P. Paul, Jr., director of Industrial Relations, Philadelphia Gas Works Division of The United Gas Improvement Company. Dan J. Egan, vice-president, Manufacturers Light and Heat Company, was chairman of the afternoon session. Mr. Egan and Mr. Paul serve respectively as chairman and vice-chairman of the PGA & PNGMA Employee Administration Coordinating Committee.

The role of the State Employment Service as industry's helper was outlined by Charles P. Connolly, Chief of the Pennsylvania State Employment Service, Philadelphia. He explained how the services of his agency, which is an arm of the U.S. Employment Service, may be profitably utilized by private industry—particularly in the fields of interviewing, testing, job specifications and analysis, labor market information and retraining.

He exemplified the work of State Employment by describing its role in the retraining of workers at a recently



Walter P. Paul, left, was morning chairman, Dan J. Egan afternoon chairman



Chatting with a delegate are seminar speakers Beale (left), Laney, Connolly

closed Ford Motor Co. plant in Chester, Pa. Mr. Connolly pointed out that job-seekers of all skills and qualifications are enrolled with State Employment. He urged employers to let their labor needs be known to the government service so that both may collaborate towards meeting them.

Arthur R. Laney, Jr., assistant to director of personnel, Washington Gas Light Co., spoke on selection and place-

ment techniques. Dr. Laney, who is a recognized authority in industrial psychology, emphasized that only the properly trained interviewer can elicit reliable information from a job applicant in face-to-face discussion. Also, he advocated use of the telephone instead of the letter in making background checks with previous employers. He recommended discarding the traditional personal references asked of applicants since they



rarely produce a realistic appraisal of the person's qualifications.

At the afternoon session, Robert S. Beale, General Training Supervisor of Bell Telephone Company of Pennsylvania, employed several audience participation experiments to prove the point that employee attitudes and conditioning may undermine a well-intentioned communications program. Mr. Beale spoke of the importance of "two-way" communication in bettering the climate of opinion among employees. Companies continue to use incorrect communica-

tions techniques, he warned, and recommended a hard look at the barriers to improvement.

Control of employee absenteeism was explored by a four-man panel led by Dewitt Pike, vice-president, Rochester Gas and Electric Company.

Richard E. DuVall, vice-president for operations, Peoples Natural Gas Company, discussed "what top management expects." The role of the operating department in controlling absences was described by Leonard Orlando, superintendent of distribution administration at

Philadelphia Gas Works.

The company doctor's contribution to lost-time control was examined by Stanley J. Lubarski, M.D., medical director of Equitable Gas Company. Efficient management by operating men and visitations by supervisors to the homes of absent employees were two panel recommendations for control of costly absence rates.

Coordinator of the highly successful seminar was Edmond A. Scotch, assistant to director of Industrial Relations, Philadelphia Gas Works.

## Gaslites

(Continued from page 13)

The request was gladly granted, and the carousel headed for Jackson, where it was used extensively for one day during the week-long sales campaign. The carousel was driven slowly through the streets of Jackson creating a carnival atmosphere with its "Gay Nineties" music and attracting crowds wherever it went.

When the sales campaign was wrapped up in Jackson, a total of 157 gas lights had been sold.

The second of Texas Gas' customers to take advantage of the drawing power of the musical gas light road show was Ohio Valley Gas Corporation. The company requested the carousel for use during its three-day campaign in the Indiana towns of Cannelton, Troy and Tell City.

In the campaign the mobile display was driven along the streets, as teams of gas company employees carried their sales program from door to door. This procedure resulted in a sale of 112 gas lights—a total of one light per 27 customers.

Meanwhile up north:

Nearly 3,000 gas lights were sold in one month's time as a result of a campaign among employees of Iroquois Gas Corporation.

700 employees sold 2,959 gas lights during the month of September. They talked gas lights, promoted gas lights and sold gas lights on company time, when it did not interfere with their own work, and on their own time.

This special gas light campaign was planned and executed by Iroquois gas appliance sales manager Richard L. Duttweiler.

## Infra-red

(Continued from page 15)

Development of a satisfactory ignition system was one of the most troublesome hurdles the company faced during the more than two years infra-red units were being considered.

The final answer was an electric spark ignition similar to that used in industrial ovens. This system uses a transformer, time clock and distributor to deliver a high voltage current to a spark plug located in each infra-red unit on a

pre-arranged time cycle basis. This method provides a continuous intermittent spark ignition at each unit. If any unit blows out for any reason there is an automatic relight during the next spark cycle. Operation of the units has been entirely satisfactory and no problems of ignition, burner stage, flashback, partially lit burners or other troubles have been encountered.

Comparisons with electric infra-red outdoor burners indicate a very distinct cost advantage for gas.

Prior to the unveiling of the Minne-

apolis area's first gas-fired canopy, several indoor infra-red units had been in use, primarily in garages and similar commercial places where frequent opening and closing of doors made control of comfortable body temperature for inside workers difficult.

But now a warm sidewalk in freezing weather is bringing to the attention of the public and the business community the capabilities and versatility of infra-red heating. And for Minneapolis Gas Company this "people heater" has opened the door to possible new gas load.

## Industrial relations

(Continued from page 16)

a manufacturing division of CBS, Inc., the parent company. Of the three, Local 1212 said Mr. Vaccaro was the first of the group employed by the manufacturing division and, therefore, had the greatest combined technician and non-technician authority. From this base, the union argued that the tie in technicians' seniority should be broken by reference to the over-all company-wide service record. Using this test, Mr. Vaccaro would be retained instead of Mr. Purnick.

The arbiter declares that seniority is not inherent in the employer-employee relation-

ship; seniority benefits exist as rights only to the extent that they are made so by contract. Then he points out that the contract provides that the seniority of each technician shall start as of the date the technician was employed by the employer. In addition, the agreement specifies those instances where the parties did agree that technicians should be credited with seniority dates other than the date of employment by CBS.

Instances such as service with radio stations in particular locations prior to acquisition of such stations by CBS are specified.

The arbiter notes that there is no provision, however, crediting service in the

company's manufacturing divisions and no provision for crediting service outside the jurisdiction of Local 1212. He adds this comment about the contract:

"Therefore, since it is completely silent on the giving of seniority credit for prior service with CBS-Columbia, it is clear that, in view of a number of specific exceptions to the general rule of seniority set forth in the agreement, if the parties had intended to include the additional agreement that a tie in seniority could be broken in the manner suggested by the union, they should have and would have, by their own contractual language, inserted such additional seniority provisions in their agreement."



# Hotel show highlights busy month



Heavy duty equipment was displayed prominently in exhibit



A display in the A. G. A. lounge featured gas research

Once again the American Gas Association Combined Commercial Cooking Exhibit, in the 46th National Hotel Exposition, was the largest single exhibit of this giant trade show.

New York's Coliseum was the scene of busy activity during the week of November 6, when many thousands of delegates from the volume-feeding and institutional fields came to see new and improved equipment covering every segment of hotel and restaurant operation.

This was particularly true of the A. G. A. area, where 13 cooperating manufacturers showed their latest equipment for heavy-duty, high-speed cooking. Those exhibiting under the Blue Flame banner were:

Cecilware-Commodore Corp.; Char-Rock Manufacturing Co., Inc.; Charter Design and Manufacturing Corp.; Cleveland Range Co.; Duke Manufacturing Co.; Gas Consumers Association; Martin Oven Co., Inc.; Peerless Stove & Mfg.

Co., Inc.; Robertshaw Fulton Controls Co.; Robertshaw Thermostat Division; A. O. Smith Corp., Permaglas Division; South Bend Range Corp.; Southern Equipment Co.; Suburban Appliance Co.

A continuous stream of visitors and commercial gas men flowed in and out of the nearly 4,000-square-foot gas area, which was so laid out that one could go from booth to booth in any direction and readily see the entire A. G. A. exhibit from any point.

## Metal Treating Symposium held during national exposition

In cooperation with the American Society for Metals, A. G. A. conducted its 2nd Metal Treating Symposium as a part of the ASM program during the National Metal Exposition in Cobo Hall, Detroit, the week of October 23.

Under the general title of "New Equipment and Techniques in Melting and Heat Treatment," two papers were presented setting forth new concepts.

First, Glen Bigelow, Jr., vice president-research, Selas Corporation of America, outlined the possibilities of the company's new "Thermolog," which is actually a thermal analogue simulator for setting up and quickly solving a wide variety of heat-transfer problems.

Then, William Thome, development engineer, Surface Combustion Division, Midland-Ross Corp., gave a paper on

the uses of convection in heat treating. By the use of colored slides, a considerable amount of detail was shown on convection currents and how the work was affected by changing the method and direction of application. The fact was brought out that, by the proper use of convection, a more uniform product can be obtained and in many instances with a considerable saving in time.

## Culinary Institute founder speaks at Commercial Breakfast

Well over one hundred representatives of publications in the volume feeding field, representatives of hotel and restaurant associations, manufacturers of heavy duty cooking equipment and allied appliances, and commercial gas men attended the 14th Annual Commercial Gas Breakfast during Hotel Show Week in the Park-Sheraton Hotel, New York on November 8.

The ever-growing popularity of this affair is in a large measure due to the caliber of its guest speakers. This year's featured speaker was Mrs. Frances Roth, administrative director and founder of The Culinary Institute of America, located on the Yale University campus, New Haven, Connecticut.

This school was established some 15 years ago with the basic objective of developing a Quantity Food Trade Center which will help raise the prestige of its graduates to the level now enjoyed by the skilled European-trained chef.

In her talk to the breakfast guests, Mrs. Roth gave a thumbnail sketch of the Institute, its teaching program, its accomplishments to date, and hopes for the future in that they soon will be able to increase the enrollment by 50 per cent to about 350.

Mrs. Roth pleaded with the editorial representatives to paint a picture of the chef's profession as it really is—a dignified profession with remuneration com-

mensurate with the responsibility. There is a dire need for replacement chefs, as under natural circumstances the supply of the traditionally trained European chef is gradually dwindling to a mere trickle.

In the almost immediate future there will be top chef jobs for nearly 9,000.

Where will they come from?

Many will come from the Culinary Institute of America, stated Mrs. Roth.

Mrs. Roth asked for the cooperation of the volume feeding press to aid in upgrading opinion on this phase of volume feeding and to help add to the dignity of the job of feeding America outside of the home.

## Industrial Gas Breakfast is Silver Anniversary meeting

An enthusiastic audience was in attendance at the 25th Annual Industrial Gas Breakfast to hear the guest speakers at this highlight of Metal Show Week when it convened in Cobo Hall, Detroit, October 25.

Official greetings from the host company, Michigan Consolidated Gas Company, were voiced by Fred A. Kaiser, vice president. Commemorating this Silver Anniversary breakfast and following tradition, the American Society for Metals sent its past president, Walter E. Jominy, to bring official greetings from the Society. Mr. Jominy, one of the top

metallurgists of the time, and recently retired from the Chrysler Corporation, paid earnest tribute to the gas industry for all it has done in the field of industrial heating applications. He was especially outspoken in his praise of A. G. A. activities over the years and was appreciative of the part he had been permitted to play in industrial gas research. It was with pride that he recalled having brought to a successful conclusion A. G. A. Research Project No. 1 in 1929.

The principal speaker of the morning, Milt W. Elert, Michigan Consolidated

Gas Company, stated that he came upon his subject by overhearing two of the company Home Service ladies discussing the proper way to make grasshopper pie.

He was impressed that so much emphasis was placed on the proper blending of ingredients.

He suggested the breakfast group be addressing as the basic ingredients contributing to over-all gas industry progress. He was referring specifically to the metalworking trade press, the gas companies and the gas customers.

## Midwest Industrial Gas Council meets in Chicago October 26

An outstanding series of papers was presented at the fall meeting of The Midwest Industrial Gas Council on October 26, in the Hotel La Salle, Chicago.

The first speaker startled his audience with a series of explosions (in a safe chamber) to illustrate the text of his talk, "Prevention of Furnace Explosions." W. L. Livingston, Combustion Engineering, Inc., presented his topic in reverse. The reason for showing upwards of fifty different ways to blow up a gas-fired boiler was to emphasize what NOT to do.

"Factors That Affect the Selection of Metal Treating Equipment" was discussed by A. H. Koch, sales manager,

Standard Equipment, Surface Combustion Corporation. This veteran furnace expert traced the history of furnace manufacture from the cut-and-try era to present-day, precision-engineered equipment specifically designed for a particular job.

Mr. Koch asked his audience of industrial gas engineers to collaborate with customers contemplating new furnace installations, to insure accurate specifications being given for the processing operation.

While not directly concerned with industrial gas utilization, the Linde Company, division of Union Carbide Corporation, put on some amusing and interesting demonstrations with liquid

nitrogen, which has a temperature in the range of minus 320° F. Under the title of "Cryogenics," P. T. McKinney, public relations representative of Union Carbide in Chicago, assisted by Ronald E. Baker, explained some of the present applications of cryogenics. These uses include the utilization of cooling mediums below minus 150° F. In this area, liquid oxygen and liquid hydrogen are finding considerable use as rocket fuels.

Liquid nitrogen has many uses in the electronics field. It has been found that a Maser (which stands for Microwave Amplification by Stimulated Emission of Radiation), when immersed in liquid nitrogen, performs more efficiently to  
(Continued on page 26)

# Using the computer in distribution

By ROBERT D. SICKAFOOSE

*Supervisory Engineer  
The Peoples Gas Light and  
Coke Company*

The computer program described in this article was developed to meet the needs of the gas distribution system design engineer for analyzing existing gas distribution systems under various gas demand conditions and for designing new systems for supply to growing communities. This program is a powerful tool for long range planning since several proposals for developing or reinforcing a system can be studied and assessed before actual constructions take place.

Low pressure systems containing main sizes from 2-inch to 36-inch are analyzed with the Spitzglass low pressure flow formula and medium pressure systems with pipe diameters from 2-inch to 48-inch are calculated with the Spitzglass high pressure flow formula. The program also uses the Weymouth flow formula to study high pressure gas transmission systems composed of parallel 24-inch, 30-inch and 36-inch pipelines. The allocation of magnetic core storage for data in the IBM 7070 computer permits the analysis of up to 2,000 pipe sections in a problem. The associated network loop data is stored in the 5,000 word locations reserved for this purpose.

The modified Hardy Cross method is used to balance the gas flows. This is an iteration method whereby initial as-

sumed gas flows are corrected until the loss in pressure around each loop of pipes is less than a prescribed value. The progress of the problem toward a balanced flow solution is monitored by the computer and a progress report is put on Tape C, the output report tape, at the end of each iteration. Part of the report is written by the console typewriter for every fifth iteration and any iteration indicating divergence to give the console operator visual indication of the progress. When the system has converged, the program goes through the flow balancing routine one more time, holding all flows constant, and puts the solution for the balanced network on Tape C. If necessary to terminate a problem before it has converged to a solution, the contents of memory can be put on output tape D so the problem can be restarted from the point of interruption and, if desired, an intermediate solution can be written on Tape C.

## Errors corrected

A node balancing routine is included to compute the sum of gas flows at each pipe junction and load point. If the sum of flows at any node is not zero, error information is put on the output report tape and after all nodes have been processed the program halts. The data that caused the error conditions must be corrected and checked again by the computer before it is possible to proceed to other phases of the program. The node balancing routine is utilized

twice near the start of the program to check the initial gas flows and the re-distributed gas flows after the first iteration. It may be called in at the end of any subsequent iteration to determine if all nodes are still in balance.

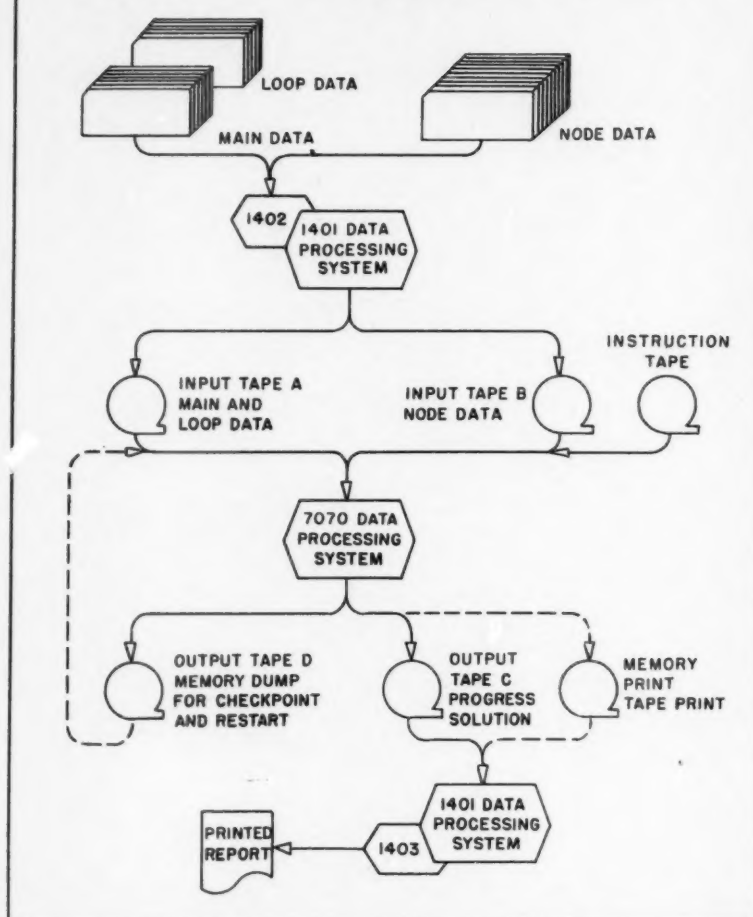
If the person who prepares the input data for a problem does not desire to manually compute the initial values of flow, he may assign them a value of zero. A routine can be selected by the computer operator to compute the initial flows in each pipe from the node data which has been prearranged in a node number sequence.

When the input data is read by the computer, the program checks it for coding errors. Information about the errors detected is typed on the console typewriter. It is possible to correct the errors at the console when the correct data is known.

A gas distribution system study or a gas transmission problem is prepared for analysis by making a master map of the pipe system on tracing cloth. The map is coded with main diameters and main numbers. Load locations are indicated with volumes delivered to the customers. An Ozalid copy of the master map is used to record the initial volumes of gas flowing in the mains with their directions, the loop numbers, and the node (main junction or load point) numbers. The length of each main can be written on this copy also.

The map contains all the input data. A clerk, using the map, tabulates the main data, loop data, and node data for

# **FLOW CHART I** **GAS DISTRIBUTION SYSTEM ANALYSIS CALCULATION**



making key-punched data cards. The data cards are listed and proofread for errors. After corrections have been made, two input data tapes for the 7070 are made from the cards on the 1401. Tape A contains the main data followed by the loop data. The node data is put on Tape B as indicated schematically in the flow chart illustrated. The tapes are brought to the 7070 for processing.

Output tape C, with the progress record for each iteration, the results of node balancing, and the solution, is converted to a printed report on the 1401 as shown in the flow chart. The solution to a balanced system is transcribed from the report to a copy of the network map; pressure drop and flow with an arrow to indicate direction are written for each main. By assigning pressures at the sources and subtracting or adding pressure losses or gains, one can compute the pressures at all junctions. The design engineer analyzes the map to determine how any areas of low pressure can be reinforced. Proposed reinforcement can be added to the original data cards and the problem run again to determine the benefit of the modification.

The program is written for a magnetic tape oriented IBM 7070 Data Processing System having a magnetic core memory of 10,000 words. The input tapes and the output report tape are processed on an IBM 1401 Data Processing System having 4,000 characters of magnetic core memory. The programs for the 7070 and 1401 and test problems are available on request.

## **Midwest council**

*(Continued from page 24)*

amplify the signals bounced off the Echo satellite. Other applications are the cooling of electrical switches now replacing transistors and vacuum tubes in electronic computers.

Another use of liquid nitrogen is as a common refrigerant for food, especially in truck and rail transport vehicles. In motor manufacture, it is used for shrink-fitting engine and transmission parts.

Cryogenics may have an application for processing metal especially designed to contain and transport low-temperature liquid natural gas.

The applications of "Submerged

Combustion" were discussed by Walter See, Submerged Combustion, Inc. It was stated that this is a system of heating by direct contact with the flame from a burner directly below the surface of a fluid or substances which are solid at normal temperatures but which may be rendered liquid by the application of heat. Mr. See showed a number of slides to illustrate a wide variety of applications.

The meeting was concluded with a paper by W. R. Jaeschki, Whiting Corporation, who discussed the pros and cons of "Preheating Cupola Blast with Natural Gas," and the success his company has had with this heating method. In his experience, the principal advantages that have been obtained were:

- 1) Fuel economy up to 33 per cent
- 2) Hotter iron in some inverse ratio to the fuel savings
- 3) Increased melting rate
- 4) Less oxidation
- 5) Lower sulphur pickup
- 6) Higher carbon pickup
- 7) Ability to use more steel scrap in the charge
- 8) Elimination of slag bridging at tuyeres and several other by-product advantages.

It was announced that the winter meeting of the Council would be held in the La Salle Hotel, Chicago, on January 26, 1962, and the two-day spring meeting in Indianapolis on May 10 and 11, 1962.



## AIEE eyes promise, threat of fuel cells

FUEL CELLS present both a promise and a threat to electric utilities, according to James D. Flynn, associate engineer, Cincinnati Gas and Electric Company.

Mr. Flynn told the fall general meeting of the American Institute of Electrical Engineers, in Detroit, Mich. recently, that the remarkable efficiencies of fuel cells promise to lower production costs of electricity. "But," Mr. Flynn said, "since they are efficient in small sizes as well as large, they

potentially can put each home owner in the power plant business."

The greatest role of kva-sized fuel cells will, however, be that of powering mobile equipment rather than producing "home-made" electricity, according to Mr. Flynn. Initially, competition will be brisk among oil, gas and electric utilities, but when fuel cells reach megawatt size, they will tend to favor electric utilities over other energy suppliers.

## Two electronic firms announce new breakthroughs in thermoelectricity

WITHIN THE SPACE of two days recently two electronic firms announced new breakthroughs in the field of thermoelectricity.

The Radio Corporation of America has exhibited what it claims to be the most efficient, high-temperature thermocouple yet developed. General Instrument Corporation has developed a mass production process for thermoelectric devices and has invented a "semi-metal," which permits atomic bonding of the two dissimilar metals required to produce a thermoelectric effect.

RCA reported that its device—a half-inch

cube of germanium, laced with silicon and coated on two sides with copper—operates at temperatures several hundred degrees higher than similar materials at an efficiency of 9 per cent. Through further research, the company expects to increase efficiency by at least one third.

According to RCA engineers, a piece of their alloy with a one-square-foot surface could supply 10,000 watts of electricity—more than three times the rate used in the average American household.

Dr. James Hillier, vice president, RCA Laboratories, Princeton, N. J., said the dis-

covery could make possible the eventual generation of electricity for a house simply by heating a block of the metal in a furnace.

General Instrument is seeking patents on both its manufacturing process and the "semi-metal," which is a substance called "Generalock." The twin advances are said to yield a thermal efficiency of 7 or 8 per cent.

General Instrument Corporation hopes ultimately to produce thermoelectric generators to sell as low as \$10.00 per watt of power produced.

A. G. A. research engineers are following these and similar developments closely.

## Plans approved, construction to begin on gas exhibit at Seattle Fair

PLANS FOR the gas industry's \$500,000 exhibit at the 1962 Seattle World's Fair were approved at a recent meeting of the board of Century 21 Gas Exhibit Inc., and a construction contract has been awarded.

The circular structure will be built largely of materials that are processed with natural gas. Occupying 9,500 square feet of space, the building will be situated near the south entrance to Century 21, in the shadow of the towering Space Needle.

Above the building's central tower, dom-

inating the structure, will be a special "clock" operated with natural gas. This will include a central mast, with 12 radials, which will light up in sequence with the passing of the hours.

"This is a second spectacular use of natural gas at the Fair," according to William P. Woods, president of Century 21 Gas Exhibit Inc., the group in charge of the gas industry's exhibit. "It complements the 40-foot natural gas torch which will top the Space Needle as the symbol of Century 21," he said.

Within the central tower's core, a complete natural gas unit will heat and cool the building. A gas turbine within this core also will demonstrate how, in the near future, a small power plant, operated on natural gas, will supply all services, including electricity.

The roof of the building is composed of 12 radial trusses, and an upper surface of plywood, pre-coated with white vinyl plastic, the same cocooning material used in "moth-proofing" warships. The seven-foot exterior walls will be grey-beige, glazed brick. Above this will be a continuous band of glass, which will make the roof appear to "float."

Three entrances with gentle ramps will enable visitors to enter and begin viewing displays in several sequences. A series of 16 displays will tell the complete story of natural gas as a source of energy, from producing wells to present day use, and far into the future.

At the main entrance a special "tot lot" will be installed as a playground for tired children. This will include a "jungle gym" composed of sections of pipe and a "Christmas Tree" arrangement of valves. Seats will also be available for weary adults.

"It is difficult to pick out one exhibit and say that it will be the highlight of the show," Mr. Woods said. "Each exhibit will be presented dramatically, with strong visual interest, and audio aids wherever necessary."

"We will have both static and live displays, including cutaway models showing the principles of natural gas exploration, production, operation and ultimate use, and many items to interest every member of the family."

Building and displays have been designed and will be constructed under the supervision of Leonard Rennie, president of Design and Production, Inc., Alexandria, Va.



Making \$500,000 plans for the gas exhibit at Seattle World's Fair are, standing left to right: R. M. Willis; C. Gueffroy; W. P. Woods, president of Century 21 Gas Exhibit Inc.; O. M. Jones; C. M. Sturkey; G. Stevenson; H. G. Laub, and A. R. Bailey. Seated at right are J. E. Kern and B. T. Poor

## Con Ed, union sponsor training of foreign utility men

SIX EUROPEAN and African trade unionists, selected by their respective unions, have arrived in the United States for training in the production and distribution of gas and electric power under a program sponsored jointly by Local 1-2 Utility Workers Union of America, AFL-CIO, and the Consolidated Edison Company of New York City.

They were officially welcomed one evening last month at a reception at the New York University Club. Featured speakers at the reception were Senator Jacob K. Javits, Michael Sampson, business manager of Local 1-2, and Bernard E. Gallagher, industrial relations vice president of Con Ed.

The training program, designed to acquaint foreign workers with American efficiency and know-how, stems from a trip made to Eu-

rope and Africa by Mr. Sampson during the summer of 1960. He was then on a special mission for the American trade union movement.

His intensive investigation convinced him that the best way to combat Communist infiltration into the under-developed countries is to show foreign workers how Americans work and live. Con Ed, which employs more than 21,000 Local 1-2 members, enthusiastically endorsed the idea.

The six visiting workers, who will work in various Con Ed installations for a minimum of six months, being paid the union-contract rates of pay for the jobs they perform are: Aleya Mongi, Tunisia; Aloysius Anigbo, Nigeria; Charles Emile Hespel, France; Mustapha Marniche, Algeria; Kahia Lahcen, Morocco, and Morris Mulima, Kenya.

## WUA operating, sales sections meet

THE ANNUAL convention of the gas and electric operating and sales sections of the Wisconsin Utilities Association was held October 18-19 in Milwaukee, Wis.

Ernest F. Semrad, vice president of operations, Milwaukee Gas Light Company, was appointed chairman of the gas operating section, succeeding William J. O'Donnell, vice president and general manager, Manitowoc division, Wisconsin Fuel and Light Company.

Linus F. Stoll, Oshkosh, gas staff engineer,

Wisconsin Public Service Corporation, was appointed vice chairman.

H. S. Turkelson, Kenosha district manager, Wisconsin Natural Gas Company, was appointed chairman of the gas sales section, succeeding Rolla N. Wilson, Eau Claire, manager, merchandise sales, Northern States Power Company.

Joseph W. Collins, vice president and general manager, Wausau division, Wisconsin Fuel and Light Company, was elected vice chairman.

## Gas heaters for fallout shelters now available

A GAS HEATER and food warmer designed specifically for fallout shelters has been introduced by the Chattanooga Royal Company.

The new gas appliance, developed in cooperation with the National Office of Civil Defense and Mobilization, has been constructed to meet all the requirements of above ground, below ground and basement shelters.

It is the first gas heater to be accepted by the national civil defense agency and approved by the A. G. A. Testing Laboratories. The unit will operate on either natural or LP-Gas, and is equipped with either manual or automatic controls.

Civil defense requirements specify that a shelter appliance must use neither outside power nor shelter oxygen.

## New Jersey Utilities Association elects officers



James P. Hayward, left, outgoing president, New Jersey Utilities Association, left, congratulates new president, Robert W. Kean, Jr., center, of Elizabethtown Gas Company. Looking on is Theodore H. Kendall, president, South Jersey Gas Company, who was elected association vice president

## All eyes are on gas



From the Brooklyn Bridge to Flatbush, gas flame symbols will be seen shining atop new general office building of The Brooklyn Union Gas Co.

## Union Gas is fifty

ON DECEMBER 19, the Union Gas Company of Canada will celebrate the 50th anniversary of its founding.

During the half century, the Canadian utility has increased its number of customers 52 times over. It has 18 times more miles of distribution, transmission and field gathering lines, and its assets have increased by more than 31 times.

## Gas economics to be studied

ECONOMICS of the gas industry will be surveyed in a conference to be presented by the International Oil and Gas Educational Center in Dallas, March 1-2, 1962.

The two-day meeting, to be held at the Southwestern Legal Center, is designed especially for lawyers, landmen, economists, geologists, petroleum engineers, and management of the oil and gas industry.

Copies of the program may be obtained from the Registrar, Southwestern Legal Foundation, 3315 Daniels, Dallas 5, Texas.

## Sahara-U.K. gas plan okayed

THE BRITISH GAS COUNCIL plan for the importation of natural gas from the Sahara, which will eventually lead to lower costs of gas supply in Great Britain, has been approved by the Minister of Power.

It is hoped that in about 2½ years' time two specially constructed tankers will be in operation conveying 354 million therms (about 35.4 billion cubic feet of natural gas) per annum to a terminal at Canvey Island, Essex, England. These deliveries represent about one-eighth of the present gas supplies. The gas will flow through an existing main from Hassi R'Mel to Port Arzew near Oran in North Africa. There, it will be liquefied by Camel, an Algerian firm.

## More turbines available

**A**N EXPANDED range of jet-powered gas turbines for industrial applications is now available from The Cooper-Bessemer Corporation and Pratt & Whitney Aircraft.

Jet-powered gas turbines will be marketed by Cooper-Bessemer, which supplies the heavy-duty power turbine and industrial packaging. Sizes ranging from 2,500 horsepower to 10,000 and 15,000 horsepower will be offered, based on the successful heavy-duty, continuous operation of a prototype unit installed last year at the Columbia Gulf Transmission Company's station at Clementsville, Kentucky.

This 10,500 horsepower prototype unit has operated thousands of virtually trouble-free hours since November 15, 1960. Units below the 2,500 horsepower range are also being readied for marketing.

Cooper-Bessemer and P&WA collaborated on the design and construction of the 10,500 horsepower jet-powered gas turbine for industrial use, according to the concept originated by R. L. Boyer, vice president, advanced planning for Cooper-Bessemer.

## Western GAES to meet

**T**HE WEST COAST chapter of the Gas Appliance Engineers Society has announced its schedule of meetings for the early part of 1962.

The group plans to meet on January 15, March 19, and May 21.

At the January 15 meeting, R. I. Snyder, vice president, Southern California Gas Company, who is also chairman of the A. G. A. General Approval Requirements Subcommittee and a member of the Laboratories Managing Committee, will be feature speaker. His subject will be "Research."

## Gas cools economically



Statham-Swearingen Inc. has a 15-ton gas air conditioning unit, which cools at a claimed 30-50% operating cost saving over conventional units

## IGT trustees meet, hear favorable income report



A natural gas fuel cell battery is the center of attention at IGT. Left to right are: Dr. F. E. Vandaveer; R. J. Rutherford; M. W. Heath; W. J. Thiel; E. H. Tollefson, retiring board chairman of IGT; H. R. Linden, the Institute's director, and E. B. Shultz, Jr., member of IGT research staff

**A**T THE 20TH ANNUAL meeting of members and trustees of the Institute of Gas Technology, November 2, in Chicago, Dr. Martin A. Elliott, IGT's immediate past director, announced that the institute's gross income had passed the \$1 million mark for the first time, and Marvin Chandler, president, Northern Illinois Gas Company, was elected chairman of the IGT board of trustees.

In his annual report, Dr. Elliott stated, "Gross income reached a new high of \$1,263,000, an increase of \$290,000, or 30 per cent, over the preceding year."

He also reported on IGT research now in

progress, including the improvement of methods of producing natural gas supplements from coal and oil shale, to assure the nation of an adequate supply of utility gas for another century. Dr. Elliott said that the most promising processes involve reacting the carbon of fossil fuels with hydrogen to produce methane.

Dr. Elliott this year is making his last annual report as IGT director. He had been appointed academic vice president of Illinois Institute of Technology as of September 1. His successor is Dr. Henry R. Linden, who formerly was IGT's research director.

## Cascade ads win award

**T**HE DIRECT MAIL Advertising Association has given its "Direct Mail Leader" award to a campaign of the Cascade Natural Gas Corporation of Seattle.

The Cascade campaign of six letters, created and produced by The Cone Company of Seattle, won out over comparable advertising submitted from all over the United States.

The award, one of only 25 given annually, is considered by advertising men to be the highest recognition possible for a direct mail campaign.

## NSC elects Papich

**RAUEL N. PAPICH**, safety manager for the American Gas Association, has been elected chairman of the Publications Committee, Motor Transport Conference, National Safety Council.

Mr. Papich's selection occurred during the 49th National Safety Congress held recently in Chicago, Ill.

His election to this section of the National Safety Council was in recognition of his work in the field of accident prevention in the gas industry.

## Gas cooks cleanly



Caloric Appliance Corp. offers built-in gas ranges with a ventilation system which "eliminates the need for sealed cabinets around the unit"



# Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

## Certificate cases

● **Arkansas Louisiana Gas Company** has filed a budget-type construction application covering 1962 facilities for attaching newly acquired natural gas supplies to the system, when available. The total cost of the proposed facilities would not exceed \$6.5 million, and single projects are limited to a cost of \$500,000.

● **El Paso Natural Gas Company**, in its budget-type application, proposes to build natural gas facilities during 1962, for acquiring new reserves when available. The cost of a single project is limited to \$500,000 and the over-all cost of all projects will not exceed \$5 million. In another application, the company proposes 1962 facilities not exceeding a total cost of \$1,261,000 for delivering natural gas to existing resale customers and for well drilling operation.

● **Lone Star Gas Company**, in its budget-type application for facilities required to add new gas supplies when available, proposes to limit the over-all cost of all projects to \$1 million, and single projects to \$250,000.

● **Monterey Gas Transmission Company** intends to acquire the 6.2 billion Mcf King Ranch gas reserves, developed by Humble Oil and Refining Company, for resale to the Columbia Gas System. Monterey Gas Transmission is seeking authority to purchase the Humble Oil gathering system and 238 miles of transmission line for \$27.7 million. It

also requests authorization to extend the transmission line another 216 miles to Alexandria, La., at a cost of \$32.8 million, where deliveries may be made to Columbia Gulf Transmission Company, for the account of United Fuel Gas Company. Deliveries are proposed to start November, 1962.

In turn, Columbia Gulf Transmission Company proposes a four-year program of constructing a total of 391 miles of loop-lines, and other appurtenances at an over-all cost of \$65.4 million. United Fuel Gas and Kentucky Gas Transmission companies propose four-year construction plans estimated to cost \$17.3 million. Ohio Fuel Gas Company proposes to spend \$1.3 million for additional facilities to increase deliveries from United Fuel Gas Company.

● **Natural Gas Pipeline Company of America** has filed a budget-type application proposing the construction of facilities, as needed, to add new natural gas supplies to its system. The total cost of all projects will not exceed \$3.5 million, while single projects are limited in cost to \$500,000.

● **Natural Gas Storage Company of Illinois** is seeking authority to increase withdrawal capacity from reservoirs in the Herscher field, at an estimated cost of \$3.4 million for needed facilities. An increase to 40,000 Mcf is sought in maximum peak-hour capacity and an increase of 75,000 Mcf in the maximum daily withdrawal to a total withdrawal of 800,000 Mcf.

● **Northern Natural Gas Company** has filed an application for authorization to construct natural gas facilities, at an estimated cost of more than \$11 million, to extend service to 65 communities in its service area. These facilities will be constructed over a 3-year period beginning with the 1962-63 heating season. At the end of the third year, the resultant demand is expected to reach 37,904 Mcf daily, with requirements supplied from Redfield Storage Field.

● **Panhandle Eastern Pipe Line Company** filed a budget-type application covering 1962 facilities, as required, to add new natural gas reserves to its system. The over-all cost of construction is estimated at not more than \$2.5 million, with single projects limited to a cost of \$500,000.

● **Transcontinental Gas Pipe Line Corporation** has filed an application to construct and operate natural gas facilities whose over-all costs are estimated at about \$49 million. These facilities are designed to increase daily supply capacity by 93,403 Mcf for the benefit of 33 existing customers. Peak-day sales and transportation allocations would then reach 1,570,216 Mcf, exclusive of storage, and 2,272,668 Mcf including storage supplies.

● **United Gas Pipe Line Company** has been authorized to construct about 40 miles of 24-inch loop pipeline on its existing Mobile to Pensacola line, at an estimated cost of \$3.9 million. These facilities, when completed in two phases, during 1961 and 1962, will raise delivery capacity to industrial customers by 31,050 Mcf daily, and to resale customers a total of 18,815 Mcf daily. Total line capacity will be increased to 421,483 Mcf daily in the Mobile, Pensacola area. Under another authorization, about 10.2 miles of 30-inch loop pipeline will be constructed in Louisiana, at a cost of more than \$2 million, to make available the increased reserves that have been developed in the Turtle Bay area. Reserves in the area have increased during the last three years from 693 to 1,955 billion cubic feet of natural gas.

Among other actions, the Arkansas Louisiana Gas Company has been authorized to acquire the natural gas facilities of Mid-South Gas Company in exchange for 336,000 shares of its common stock. Last July, Transcontinental Gas Pipe Line Corporation was given temporary authorization to construct about \$31 million in natural gas facilities designed to increase daily capacity by 92 million cubic feet. Recently, temporary authorization was granted for delivering this additional capacity to 26 customers along the Atlantic Seaboard.

The newly organized Tarpon Oil Corporation has been authorized to acquire a 14-mile pipeline in Mississippi which will be

## Statement Required by the Act of August 24, 1912, as Amended by the Acts of March 3, 1933, July 2, 1946 and June 11, 1960 (74 Stat. 208) Showing the Ownership, Management, and Circulation of

The American Gas Association Monthly published monthly, except July and August, bi-monthly then; at Brattleboro, Vermont for October 1, 1961.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Gas Association, Inc., 420 Lexington Ave., New York 17, N. Y.; Editor, Bernard Kaapcke, 420 Lexington Ave., New York 17, N. Y.; Managing editor, None; Business manager, None.

2. The owner is: American Gas Association, 420 Lexington Ave., New York 17, N. Y.; President, Lester T. Potter; 1st Vice President, Edward H. Smoker; 2nd Vice President, John E. Heyke; Treasurer, C. H. Mann; Assistant Treasurers, Lawrence Vose and William I. Thompson; Managing Director, Chester S. Stackpole; Secretary, Jac A. Cushman (all of 420 Lexington Ave., New York 17, N. Y.).

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: 9,500 issues per month.

BERNARD KAAPCKE, Editor

Sworn to and subscribed before me this 27th day of September, 1961.

ROBERT J. CUTTING  
NOTARY PUBLIC, STATE OF NEW YORK  
No. 30-5895810  
Qualified in Nassau County  
Term Expires March 30, 1962



utilized to enable producers to transport natural gas from wells which had been shut in for lack of a market. Northern Natural Gas Company has received approval to eliminate branch lines and measuring facilities previously authorized to serve 14 communities in Iowa, South Dakota, Minnesota, and Nebraska. The communities have either declined to contribute toward the cost of facilities required for service or have decided not to continue their original plans.

#### SUMMARY OF PIPELINE COMPANY RATE FILINGS—SEPTEMBER, 1961

	Number	Annual Amount
Increases under suspension at beginning of month	99	\$399,025,700
Increases suspended during month	1	—
Increases disposed of after suspension	—	4,261,200
Amount allowed	—	2,274,400
Amount disallowed	—	1,986,800
Amount withdrawn	—	—
Increases allowed without suspension	—	—
Increases suspended and pending at end of month	100	\$394,764,500

#### SUMMARY OF PIPELINE COMPANY CERTIFICATE FILINGS—SEPTEMBER, 1961

	Number of Applications	Miles of Pipeline	Compressor Horsepower	Estimated Cost
Pending at beginning of month*	187	6,041	492,848	\$745,331,128
Filed during month	21	412	6,500	33,281,027
Issued during month	8	41	130	2,219,300
Otherwise disposed of during month	7	8	—	200,147
Pending at end of month	193	6,404	499,218	\$776,192,708

\* Adjusted to include amendments and supplements to applications and modifications of certificates.

#### SUMMARY OF INDEPENDENT GAS PRODUCER RATE FILINGS—SEPTEMBER, 1961

	Number	Annual Amount
Tax rate increases allowed without suspension	1	\$ 170
Other rate increases allowed without suspension	83	916,987
Rate increases suspended	47	329,880
Total rate increases	131	1,247,037
Tax rate decreases allowed without suspension	—	—
Other rate decreases allowed without suspension	2	577
Total rate decreases	2	577
Total rate filings (all types)	566	—
Total rate filings acted on from June 7, 1954, to September 30, 1961	56,989	—
Rate increases disposed of after suspension (during month)	6	262,442
Amount allowed	—	—
Amount disallowed	—	29,605
Amount withdrawn	—	232,837
Rate increases suspended and pending at end of month	3,915	\$165,787,033

## Heaters number in millions



M. E. Morgan, A. O. Smith Corp.; J. A. Briggs, National Association of Plumbing Contractors celebrate A. O. Smith's 6 millionth water heater

## Utility sets safety record

THE GENERAL OFFICE department of Citizens Gas and Coke Utility has received the A. G. A. Safety Merit Award for completing over one million consecutive man-hours of operation without a disabling injury.

An average of 306 employees worked 2,588,482 accident-free man-hours from January 22, 1958, to September 13, 1961.

## New pipeline planned

SHELL OIL COMPANY, owner of large reserves of natural gas in western Oklahoma, has acquired an interest in Oklahoma Illinois Gas Pipeline Company.

The Oklahoma Illinois Company plans to build a 600-mile gas transmission line from the Anadarko Basin in western Oklahoma to supply the growing needs for natural gas in the St. Louis area of Missouri and Illinois.

R. D. Ricketts, president of the pipeline company, added that an Application for a Certificate of Public Convenience and Necessity for construction of the new pipeline will be filed before the first of the year.

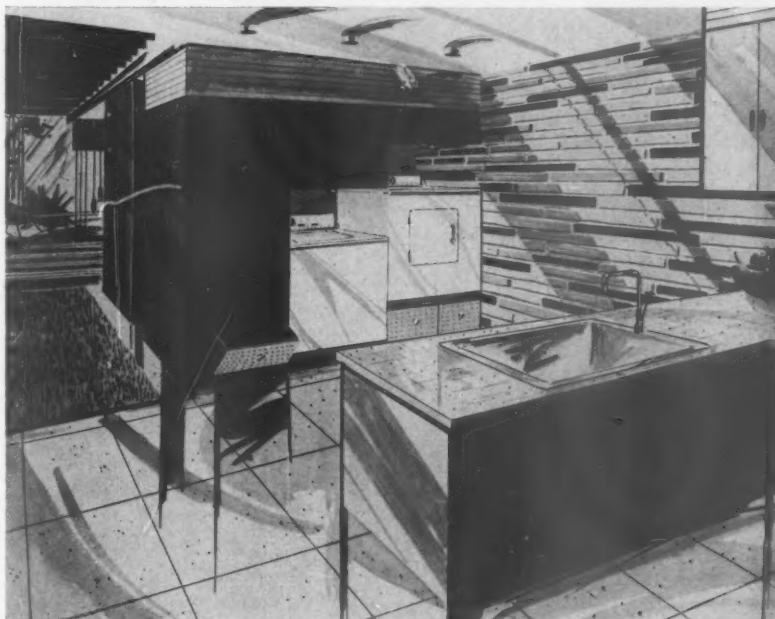
## Microwave to go 1,000 miles

ALPHA CORPORATION and the Mid-Valley Pipeline Company, Longview, Texas, have concluded negotiations for a new microwave system to extend from the pipeline's main offices in Longview to Lima, Ohio.

The 1,000-mile system, which will extend along Mid-Valley's main right-of-way, will include a total of 43 microwave stations. It will be an integral part of an extensive modernization program by Mid-Valley and is designed to provide more efficient over-all pipeline control. The program will be completed during mid 1962.

Alpha Corporation is a Dallas-based division of the Collins Radio Company.

## Maytag encourages planning for modern home laundries



To focus attention on the home laundry, the Maytag Company has established a Laundry Idea Center and commissioned six architects to develop original laundry plans for a variety of geographical areas, architectural styles and costs. Here is one architect's idea of an ideal laundry set-up

## A. G. A. lists December publications

### COMMERCIAL PROMOTION

- **A New Face Lift—An Old Concept.** A promotional brochure on *A New Climate for Education*, which deals with school heating. 10 cents each. Cat. No. 65a/C.
- **Commercial Gas Marketing Planning Portfolio.** A year-round marketing planning guide on all commercial gas applications. 25 cents each. Cat. No. 67/C.
- **Promotional brochure on film—"One Chance."** Information on hot water sanitation. Free. Cat. No. 66a/C.

### EDUCATIONAL MATERIAL

- **"Gasarama!"** 16 mm color-sound version of Michigan Consolidated Gas Company's science show for schools. \$295 for first print. \$235 for each additional print. Cat. No. ED-19.

### GOLD STAR

- **Gold Star film strip and record.** \$3.70. Cat. No. 6/GS.
- **Gold Star flip chart.** 20 cents. Cat. No. 7/GS.

### HOME BUREAU

- **How Utilities Help Sell Your Houses.** A reprint from *American Builder* magazine. 16 cents each. Cat. No. 100/K.
- **Gas for Easy Living.** A reprint from *New Homes Guide*. 20 cents each. Cat. No. 101/K.

### INDUSTRIAL AND COMMERCIAL

- **1961 Industrial Gas School lectures.** A

manual. \$5.00 per copy. Cat. No. 129/I.

### OPERATING

- **3-hole post binder to accommodate Operating Section conference papers.** \$2.00. Cat. No. OP-61-BR.

### PROMOTION

- **Jinx Falkenburg display.** A 5½ foot die-cut display. \$5.30 each. Cat. No. 95/P.

### RESEARCH

- **An Evaluation of the Various Methods for Attaining Cooler Domestic Gas Kitchens.** Research Bulletin 89, by L. A. Nead and B. G. Honaker, Jr. \$2.50. Cat. No. 144/DR.
- **Burning Velocities of Hydrocarbon Flames.** Research Bulletin 30, by S. A. Weil. \$5.00. Cat. No. 8/SR.

### STATISTICS

- **Population Forecasting for Utilities.** A chapter in A. G. A. Marketing Research Handbook. Free. Cat. No. 74/S.
- **Third Marketing Research Seminar for Gas Utilities.** Proceedings, October, 1961. \$5.00. Cat. No. 75/S.
- **Report of the Rate Committee—1960, 1961.** \$2.00 to members. \$3.00 to non-members. Cat. No. 80/S.
- **Monthly Bulletin of Utility Gas Sales, August, 1961.** By subscription. \$1.00 per year. Cat. No. 60/S-61-8.
- **Quarterly Report of Gas Industry Operations, 1961, second quarter.** By subscription. \$1.00 per year. Cat. No. 64/S-61-2.

## Town glows with gas



Bridgeport Gas Company has cooperated with the city of Bridgeport, Conn., to erect six gaslights. Mayor S. J. Tedesco was lamplighter

### Ventura joins Robertshaw

**G**EORGE J. VENTURA has joined Robertshaw-Fulton's Robertshaw Thermostat division as manager, industrial engineering.

Mr. Ventura is a native Pennsylvanian, who holds a B.S. degree in industrial engineering from Pennsylvania State University.

Before joining Robertshaw, Mr. Ventura had 15 years' experience in the field of industrial engineering. For the last nine years he was with the Harnischberger Corporation at Escanaba, Mich. Earlier he was affiliated with the American Steel & Wire Division at Donora, Pa.

He is a member of the American Institute of Industrial Engineers and of the Bay do Noc Engineers Club.

### Fields heads campaign

**U**NDER THE CHAIRMANSHIP of Ernest S. Fields, president, Cincinnati Gas and Electric Company, the United Appeal campaign in the Cincinnati, Ohio, area has collected a total of \$6,665,600.

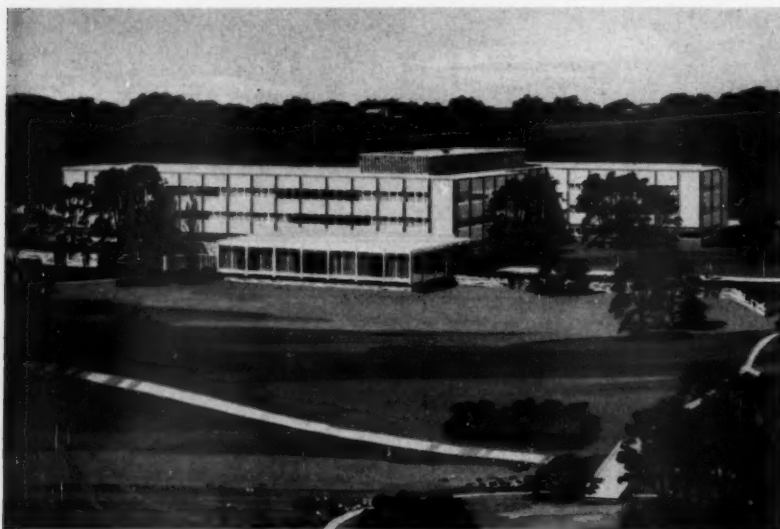
Mr. Fields and his co-chairman, Frank J. Van Lahr, president of the Provident Bank, led 30,000 volunteer campaigners in the eight-week drive for funds to help support 126 health, welfare and character-building agencies.

During his career with Cincinnati Gas and Electric Company, Mr. Fields has engaged in various fund-raising campaigns. Recently he was chairman of the corporate division of the fund drive of the University of Cincinnati.



E. S. Fields

## Northern Illinois Gas general office building going up



Moving day for the personnel of Northern Illinois Gas Company will be one day in the spring of 1963. By then, this modern general office building, located on a major east-west highway in Bellwood, Ill., will be completed and will stand as a continuing example of gas industry expansion

## National LP-Gas Council elects Ritzenthaler president

**A** B. RITZENTHALER, vice president of The Tappan Company, has been elected president of the National LP-Gas Council. He succeeds D. G. O'Meara, general sales manager of Pyrofax Corporation.

Fred H. Ramseur, Jr., manager, natural gasoline division, Cities Service Petroleum Company, has been elected chairman of the Council's executive committee, and James F. Donnelly, Sr., assistant to the vice president of A. O. Smith Corporation, has been re-elected secretary-treasurer.

New members of the board of directors are: Edward A. Nash, director, gas appliance sales, Norge Sales Corporation (he will also serve as chairman of the Council's advertising committee); Ralph E. Halverson, appliance field sales manager, Hamilton Manufacturing Company; Jesse Moore, vice president, Coleman Company, Inc.; S. B. Rymer, president, Magic Chef, Inc.; and Tom Arden, president, Robertshaw-Fulton Controls Company. Mr. Arden will also serve on the Council executive committee.

## Cascade names two

**C**ASCADE NATURAL GAS CORPORATION has elected R. J. Garrett and H. B. Munton vice presidents.

Mr. Garrett joined Cascade Natural Gas as residential sales manager four years ago. He started in the natural gas business in 1946 as a salesman for Coast Counties Gas and Electric Company, California.

Mr. Munton, after graduating from Stanford University as a mechanical engineer in 1937, joined Coast Industrial Gas Company, Pittsburg, Calif., as a measurement engineer. Following a merger with Coast Counties Gas and Electric, Mr. Munton became industrial sales manager for properties formerly served by Coast Industrial.

He ultimately held positions as division gas engineer and regional sales engineer until the company was merged into Pacific Gas and Electric Company.

He then became industrial gas engineer for the company's East Bay division, Oakland, Calif.

## Manley is president



F. E. Manley

**F**RANCIS E. MANLEY has been named president of the Fitchburg Gas and Electric Light Company, effective January 1.

Mr. Manley, vice president of Orange and Rockland Utilities, Inc., will succeed Albert G. Neal, who is retiring after 52 years of service in the industry.

Mr. Manley is nationally recognized in the utility field as an authority on appraisals, real estate, right of way, legal and title occupations.

Currently serving as vice chairman of the land economic studies committee of the American Right of Way Association, he is national chairman of that association's electric industry section.

## Duffy, Filbert promoted

**J**OSEPH M. DUFFY, superintendent, New Britain Gas Light Company, has been appointed a vice president.

John S. Filbert will succeed Mr. Duffy as superintendent. Mr. Filbert has been with the company for 12 years. Previously he was with the Long Island Lighting Company.

## Lone Star Gas Company promotes three

**L**ONE STAR GAS COMPANY has announced three new appointments.

R. H. (Dick) Gray has been elected vice president in charge of the Fort Worth division of distribution. Roy E. Pitts has been named general counsel, and W. A. Collins, Jr., has been appointed assistant director of Lone Star's research and development department.

Mr. Gray succeeds A. P. Rowland who retired November 30, after more than 37 years of service. Mr. Pitts succeeds Warren J. Collins who died October 30.

The new vice president had served as manager of the company's south Texas region of distribution. In his new position, Mr. Gray will direct gas service operations for more

than 200,000 customers in more than 50 communities.

Mr. Pitts, the new general counsel, formerly was assistant general counsel, having been elected to the post in 1957. He has been a member of the legal department since 1933. A native of Wylie, he received his law degree from the Dallas School of Law. Mr. Pitts is a member of the American, Texas and Dallas bar associations.

Mr. Collins, the new assistant director of research, formerly utilization coordinator, first joined Lone Star in 1947 as an industrial engineer in Denison. He was transferred to the Dallas headquarters in 1949. In 1953, he was appointed air conditioning coordinator and utilization coordinator in 1961.

## Johnson, Burge take new positions at United Gas

**A** T. JOHNSON, JR., sales manager, Louisiana-Mississippi distribution division, United Gas Corporation, has been promoted to appliance sales and promotion director of the company's entire distribution operations, and Emagene Burge, home service director in the Louisiana-Mississippi division, has been made home service director of the company's entire distribution system.

Mr. Johnson joined United Gas as a salesman at Houston, Texas, on October 14, 1940. In 1946 he was named purchasing agent, a position he held until August 1, 1947, when he was transferred to the sales department and promoted to division sales manager at Jackson, Miss. He served at Jackson until 1955, when he was transferred to the general

office administrative department in Shreveport and promoted to sales manager of the Louisiana-Mississippi distribution division.

Mr. Johnson is a member of the Petroleum Club of Shreveport, American Gas Association and Southern Gas Association.

Miss Burge is a graduate of Pearl River Junior College, Poplarville, Miss. She received a B.S. degree in home economics from Mississippi Southern in Hattiesburg, Miss., and worked on her M.A. degree in home economics at Mississippi State College.

Miss Burge is president-elect of the Louisiana Home Economics Association. Her term begins August 1, 1962. She also has served as chairman of the home service section of the Southern Gas Association.

## R. G. Kenan retires

**R**OBERT G. KENAN, vice president, industrial relations and insurance, Southern Natural Gas Company, has retired.

Mortimer H. Jordan, vice president, public relations and industrial development, will assume the duties formerly performed by Mr. Kenan with the title of vice president, personnel, public relations and industrial development.

Vent B. Speaker, manager of the land department, becomes manager of public relations and industrial development, and Cecil R. McInnis will be manager of personnel, insurance and safety.

Mr. Kenan, who joined the Southern Natural organization in July, 1930, has served the company in numerous capacities, particularly in personnel, public relations and insurance matters.

## J. F. Purcell elected

**J**AMES F. PURCELL has been elected vice president of public relations for Northern Indiana Public Service Company.

Mr. Purcell, who joined NIPSCO in 1953 to organize the utility's public relations department, graduated magna cum laude from the University of Notre Dame in 1942. In June, 1943, he received his degree from the Harvard Graduate School of Business Administration and was commissioned an ensign in the United States Naval Reserve that same month.

In September, 1953, he became manager of public relations for Northern Indiana Public Service Company.

Active in a variety of business and civic organizations, Mr. Purcell was chairman of the public relations committee of the American Gas Association from 1956 to 1958.

Personal  
and  
otherwise



## Robert E. Brooker resigns from Whirlpool Corporation

**ROBERT E. BROOKER**, president and director, Whirlpool Corporation, has resigned his post at Whirlpool to accept the position of president, Montgomery Ward & Company.

At a special meeting, the Whirlpool board heard Elisha Gray, chairman of the board, relate the many contributions by Mr. Brooker to the total progress of this company, particularly since Mr. Brooker became its president May 12, 1958.

Mr. Gray said, "It is completely understandable that Tom Brooker accept the post offered him by the Montgomery Ward board

of directors. His depth of training, experience and good judgment eminently qualifies him for this splendid opportunity. The Whirlpool board of directors and the entire Whirlpool management extend to him their sincere congratulations and best wishes. The many programs instituted by Mr. Brooker have become such an integral part of our operation that their value will continue to strengthen and aid our total effort."

The Whirlpool board announced Mr. Gray will resume the dual function of chairman and president. There are no plans to replace Mr. Brooker.

## Walworth elects Collins



J. W. Collins

**JOHN W. COLLINS** has been appointed president of Walworth Company.

Mr. Collins, president of Walworth's subsidiary, Grove Valve & Regulator Company, Oakland, Calif., will assume his new duties as Walworth president immediately. In addition to his new office, Mr. Collins will continue as president of Grove.

During his 18 years' service with Grove, Mr. Collins was treasurer, senior vice president and then president of the west coast based manufacturer of valves and pressure regulators. Grove products are sold to the petroleum, petrochemical, and aerospace industries.

## Krausse joins Dresser

**DAN M. KRAUSSE**, formerly senior vice president of Cosden Petroleum Corporation, has joined Dresser Industries, Inc. in Dallas, Texas, as vice president.

R. L. Tollett, Cosden's president and general manager for 21 years, is assuming Mr. Krausse's managerial responsibilities in the refining and chemical division. Mr. Krausse will work with Dresser companies related to oil and gas drilling equipment and services.

## Whirlpool names Trone



C. J. Trone

**CURVIN J. TRONE** has been named to the new position of operations controller at Whirlpool Corporation.

Mr. Trone, currently assistant to the president, will be responsible for financial operations in manufacturing, sales and administrative areas. He was director of budgets at Whirlpool from 1957 through

1959 and earlier was manager of manufacturing engineering for Servel, Inc., and superintendent of planning and control for Kaiser Aluminum and Chemical Corporation.

## J. W. Gaw promoted

**J. WILSON GAW**, public relations vice president, has been promoted to vice president in charge of the eastern division, and Ward M. Rockey, manager, Centralia Chamber of Commerce, has been appointed director of public relations at Washington Natural Gas Company.

Mr. Rockey will supervise the company's information program throughout the system.

He is a graduate of Washington State University, and a native of Olympia. His brother, Jay Rockey, is public relations director of the Seattle World's Fair.

## Mitchell is vice president



B. E. Mitchell

**BRYAN E. MITCHELL** has been elected vice president of Pan American Gas Company, the wholly-owned natural gas transmission subsidiary of Pan American Petroleum Corporation. Mr. Mitchell will also be a director of the company.

Mr. Mitchell succeeds E. A. Renfro who has been serving as a Pan American Gas Company officer and director, in addition to his responsibilities as Gulf Coast division gas superintendent for Pan American Petroleum Corporation. The increasing scope of this assignment made it necessary for Mr. Renfro to resign his duties with Pan American Gas.

## Republic appoints Schlegel

**RUSSEL A. SCHLEGEL** has been appointed president of the Republic Flow Meters Company, a subsidiary of Rockwell Manufacturing Company.

W. F. Crawford is relinquishing the presidency but will continue as a director of Republic. Mr. Crawford is also president of Edward Valves, Inc. and vice president of Rockwell Manufacturing Company.

Mr. Schlegel will come to Rockwell from Daystrom, Incorporated, where he has been vice president and general manager of the Weston Instruments Division, Poughkeepsie, N. Y. Prior to joining Daystrom in 1956, he had been with Minneapolis-Honeywell Regulator Company for 19 years in various marketing capacities.

## McDonough retires



W. A. McDonough



A. P. Good

**WALTER A. McDONOUGH**, vice president, controller, and director of Northern Indiana Public Service Company, has retired.

Mr. McDonough, who completed more than 50 years of outstanding service in the public utility field, also resigned from the utility's board of directors but will serve in a consulting capacity for the next five years. Allan P. Good will succeed Mr. McDonough as vice president and controller, and Carl D. Rees, first vice president of Northern Indiana Public Service Company, has been elected to succeed Mr. McDonough as a member of the NIPSCO board of directors.

## Sigmund is manager

**RICHARD T. SIGMUND** has been appointed manager of public relations for the South Jersey Gas Company.

Mr. Sigmund will direct the company's public relations activities throughout the utility's 2,000 square mile service area. Public relations previously was combined with employee relations under James B. Shiver. Mr. Shiver will continue to direct and administer the company's employee relations programs and will report to William A. Gemmel, vice president and treasurer.

## Goss takes new post

**HOWARD J. GOSS** has been appointed vice president, director of marketing for Harper-Wyman Company.

In his newly created position, Mr. Goss will co-ordinate and direct the activities of the following Harper-Wyman departments: sales-range components; sales-water heater components; advertising and promotion; central engineering; research; and foreign operations.

Mr. Goss, who had been vice president, sales at Harper-Wyman before his recent promotion, joined the organization in 1938 as a design engineer and has served as sales engineer, supervisor of Navy contracts during World War II, and assistant sales manager.

In order to provide strong support for Mr. Goss, Richard O. Ives has been appointed sales manager. Mr. Ives had been director of foreign operations for Harper-Wyman Company.



H. J. Goss



## Roundup of promotions and appointments

### UTILITY

Frank J. Lydick has been promoted to assistant to the vice president-administrative at The Peoples Natural Gas Company. A. P. Hays succeeds Mr. Lydick as director of public relations.

William M. Riddle has been appointed chief geologist for Oklahoma Natural Gas Company.

Frank Rivers has joined Northern Natural Gas Company as director of the utility's rate and tariff department.

Ronald M. Craigmyle, New York investment banker, has been elected to the board of directors of Arkansas Louisiana Gas Company.

James R. Birrell has been named director of purchasing and traffic at Public Service Company of Colorado.

James A. Farrell has been elected assistant controller of Northern Indiana Public Service Company.

Gerald E. Laver has been named manager of builder sales for the Ohio Fuel Gas Company.

E. H. Muehlhause has been appointed manager of Lone Star Gas Company's data processing section.

### MANUFACTURER

Robert P. Saar has been appointed vice president, manager-engineering at the Henry Pratt Company.

John Gribbel, II, has been elected director of the American Meter Company.

Ralph F. Dean, Jr., has been named

national service manager, and Thomas J. Davidson has been appointed research and development engineer at Norcold, Inc.

At Cooper-Bessemer Corporation, Walter K. Bailey has been elected a director to replace Herbert P. Bailey, who is retiring, and John S. Tonetti has been promoted to assistant manager, gas turbine sales.

Robert J. McCafferty has been appointed national sales manager of Calcinator Corporation.

Grove Valve and Regulator Company has appointed a new sales engineer, Victor H. Webb, and named Clint A. Redd as product manager-valves.

Kenneth A. Kirby has been appointed director of industrial relations at Selas Corporation of America.

At Whirlpool Corporation, Arthur K. Walton, vice president of factories, Sears Roebuck and Company, has been elected to the board of directors to fill the unexpired term of Charles H. Kellstadt.

In the corporation's RCA Whirlpool sales department, John Fellman has been appointed account liaison manager for the six RCA Victor Distributing Corporation branches, which wholesale RCA Whirlpool appliances. Succeeding Mr. Fellman as west central regional manager will be Donald R. Neftzger.

### OTHER

Curtis M. Potter has been named general management consultant on the staff of the management consulting division of Ebasco Services Inc.

### Cornelius A. Westbrook

sales engineer for Pyrofax Gas Corporation, unit of Union Carbide Corporation, died October 16.

He began his business career in 1935 as a laboratory technician with the Skelly Oil Company, Kansas City, Mo. He became superintendent of their Indianapolis, Ind., plant in 1940 and, in 1941, left to join the Curtis-Wright Corporation.

Mr. Westbrook started with Union Carbide in 1946 at Linde's Acetylene Research Division Laboratory in Indianapolis and in 1948 was transferred to Carbide's Pyrofax Gas Division in New York City. In 1955 he became the first superintendent of the newly opened Pyrofax Gas Engineering and Development Laboratory at Millwood, N. Y. and in 1960 returned to Pyrofax's New York office as industrial sales engineer.

Mr. Westbrook was a member of the Liquefied Petroleum Gas Association and served on the Appliance Specification Committee since 1949. He was vice chairman of the committee in 1956 and chairman in 1957. In addition, he was a member of the Z21 Approval Requirements Committee of the American Standards Association sponsored by the American Gas Association.



1962

### FEBRUARY

- 12-15 • 12th Exposition of the Air Conditioning, Heating and Refrigeration Industry, Great Western Exhibit Center, Los Angeles, Calif.
- 14-16 • Home Service Workshop, Milwaukee Inn, Milwaukee, Wis.

### MARCH

- 4-6 • Institute of Appliance Manufacturers, Annual Convention, Netherland Hilton Hotel, Cincinnati, Ohio
- 18-22 • National Association of Corrosion Engineers, Municipal Auditorium, Kansas City, Mo.
- 22-23 • NEGA Annual Meeting, Statler Hilton Hotel, Boston, Mass.
- 26-28 • General Management Section, Annual Conference, Denver-Hilton Hotel, Denver, Colo.

### APRIL

- 2-4 • National Conference of Electric and Gas Utilities Accountants, Bellevue Stratford, Philadelphia, Pa.
- 2-5 • A. G. A. Operating Section, Distribution Conference, San Francisco, Calif.
- 9-11 • Mid-West Gas Association, Annual Meeting, Hotel Radisson, Minneapolis, Minn.
- 10-12 • A. G. A. Sales Conference on Industrial and Commercial Gas, Shoreham Hotel, Washington, D. C.
- 17-19 • Southwestern Gas Measurement Short Course, University of Oklahoma, North Campus, Norman, Okla.
- 23-25 • GAMA Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va.



### Walter E. Long

retired president of The United Gas Improvement Company, died October 25.

Mr. Long had been president of U.G.I. from 1943 to December 31, 1954. He started his business career, after schooling in Philadelphia, as a clerk with the Philadelphia Electric Company in 1904. His promotions moved him through a number of assignments to the position of controller and later to vice president. He served in that capacity until 1928 when he joined U.G.I. In addition to his U.G.I. presidency, he was also a member of the executive committee and of the board of directors.

Mr. Long's utility associations included membership in the American Gas Association, Pennsylvania Gas Association, and Pennsylvania Electric Association, of which he was president in 1914-1915.

# Personnel service

## SERVICES OFFERED

**Executive**—seeks greater opportunity than present position affords. Seven years in electric and gas utility operations, five years army service World War II, 10 years as electric and gas consultant to management with national management consulting firm, three years with natural gas transmission company. B.S. Mechanical Engineering (1935); Master of Business Administration (Banking and Finance, 1955); registered professional engineer. All inquiries acknowledged. 2040.

**Public Relations-Advertising-Business Development**—15 years' experience. Executive assistant to chairman of the board (director of public relations, advertising, business development, personnel, editor of house organ, market research). Former news correspondent for leading wire service. Top newspaper, radio, television and advertising contact. College background. Will consider position as an assistant. Seeking opportunity with future. Salary open. Not a member of reserve. 2041.

**Management, Distribution Operations**—11 years' managerial experience. Complete charge of medium-size properties. Proficient in merchandising, distribution and transmission design, operations, maintenance, construction, utilization, service training and office administration. Age 34. Resume upon request. 2042.

**Engineering or Legal with Management Opportunity**—engineer with 4½ years' experience—three with major oil company in drilling and producing oil and gas wells and 1½ in underground construction. Will receive law degree in February, 1962. Resume on request. 2043.

**Director of Public Relations, Sales Promotion, Advertising**—seven years' experience with major advertising agency and 15 years with consulting business, serving consumer and trade field. Age 45. Permanent full-time connection desired. 2044.

**Gas Engineer and Commercial Pilot**—B.S. in petroleum and natural gas engineering. Experienced in design, installation and operation of gas distribution system. Foreign employment considered. Resume on request. 2045.

**Controller**—10 years' experience in utility field, including three as vice president. Nine years in public accounting. Can be used profitably in company requiring strength in areas of budgetary control, long-range planning and special study work relating thereto. 2046.

**Special Service Representative**—nine years' experience in contacting and supplying gas equipment and information to equipment editors of national magazines, food company laboratories, photographers, TV advertising and producing companies, advertising agencies, national food companies and colleges, and gas companies throughout the country. Seventeen years with utility as general foreman of service department, supervising 14 servicemen in servicing domestic and commercial equipment. Married; one child. Salary open. Willing to relocate. Available immediately. 2047.

**Public Relations and Promotional**—B.A. graduate University of Rochester. Experience in real estate advertising, sales and as administrative assistant. Seeking association with challenging opportunity and growth potential. Free to travel; will relocate. Complete resume on request. 2048.

**Corporate Counsel**—over 18 years' broad, diversified experience with large company engaged in multi-state operations. Harvard Law graduate, admitted to practice in New York, Ohio, U. S. Supreme Court and other federal courts. Seeks new association with expanding organization. 2049.

**Mechanical Engineer**—recent graduate from University of Michigan with M.S. and M.E. degrees. Excellent scholastic record. Solid background for highly skilled technical work involving design, development and research. Proven success in leadership and organizing abilities. Age 24. Permanent employment desirable. 2050.

**Sales Executive or General Manager**—connected with medium-sized gas distribution company. Fourteen years' experience, which includes transition to natural gas and development of new franchise areas. Knows sales, service and general management problems. Can deal effectively with people. Prefers salary and earned participation in results. 2051.

**Controller**—at present connected with national, multi-corporate publishing firm as an assistant controller. Has widely diversified responsibilities and duties. Graduated in 1954 with highest honors from The Bernard M. Baruch School of the City College of New York with a Bachelor of Business Administration degree. Majored in Public Accounting—Taxes—Busi-

ness Administration. Has successfully completed three-fourths of C.P.A. exam. Married, two children, age 28, excellent health. Wishes to associate with an outstanding organization offering a challenging career, coupled with opportunity for advancement. 2052.

**Sales Engineer**—degree in Gaseous Fuel Technology from Southern Technical Institute, division of Georgia Tech. Also, has actual gas experience. Family man; age 28. Now situated on West Coast but must relocate to midwestern or eastern states. 2053.

## POSITIONS OPEN

**Design Engineer**—old-line mid-western designer, manufacturer and marketer of domestic and commercial gas ranges seeks young design engineer. BSME or EE required. At least two years' experience with mechanical or electromechanical company. Base salary in the \$10,000 range. 0989.

**Combination Fitters and Gas Appliance Servicemen**—five men required. High school graduates, ages 25 to 40. Minimum of six years' servicing experience on all types of gas appliances and air conditioning equipment. Hourly rate \$3.10 plus liberal fringes. If you qualify, telephone call to Frank Keller or John Bolender, care North Shore Gas Co., Waukegan, Ill. 0990.

**Gas Measurement Supervisor**—Eastern natural gas company has an opening for an individual experienced in testing, operating, maintaining and installing equipment used in measuring and controlling the flow of gas, regulating gas pressures and determining gas quality. Must have the ability to interpret gas flow diagrams, circuit drawings and blueprints. Should be able to adequately supervise and represent the company in contacts with customers. Send resume of experience, qualifications and salary requirements. 0991.

**Engineer, Compression**—natural gas utility in New England needs an individual to perform engineering work in connection with the construction, operation and maintenance of compressor stations. BSME or BSEE required with some experience in compressor station work. Permanent position with wide opportunity for advancement. Send resume, including salary requirements. 0992.

**Superintendent and Manager**—for New England gas property, pipeline propane-air distribution and bottlegas. Send resume with past experience and salary requirement. 0993.

**Manager-Product Design Engineering**—for progressive company which designs, manufactures and markets a nationally known line of disposers and dishwashers. Responsible for design "until proven in production" on all models. BSME or EE required; MBA desirable. Should have 10 years' experience in engineering in the appliance or related industries. Must be creative, good supervisor and able to introduce new models. Duties will also include addressing sales meetings. Some travel required. Salary open. 0994.

**Industrial Gas Sales Engineer**—college graduate with engineering background, interested in developing industrial sales with a New England gas company. Age preference 27-32. Write, stating age, experience and salary expected. 0995.

**Industrial Engineer**—midwestern utility needs engineer to work with Chamber of Commerce, Re-development Commission and various local groups in the development of industrial and other major construction projects. Position offers permanence, with opportunity for personal development. Applicant must be college graduate, age 30-40, with some public relations experience highly desirable. Starting salary commensurate with qualifications. Send complete resume. 0996.

**Air Conditioning Representative**—3-8 years' experience in installing gas or electric air conditioners. Must also be a competent trouble shooter. BSME or equivalent required. Age 30-35; salary \$600-\$800 per month, depending on experience. Clarksburg, W. Va., location. Submit detailed resume. 0997.

**Industrial Gas Engineer**—preferably a licensed ME or CE, with a knowledge of gas distribution, pressures, piping, regulation and metering. Should also have a knowledge of fuel combustion, application of gas to industrial processes on a competitive basis and a basic understanding of metallurgy and heat treating. Applicant will be expected to have ability to make sales presentations, pleasing personality and the desire to represent the employer in civic activities. A gas and electric utility in New York State, with an expanding promotional program, offers full insurance benefit plans and liberal fringes. 0998.

## A. G. A. advisory council

E. J. BOOTHBY.....Washington, D. C.  
F. D. CAMPBELL.....Cambridge, Mass.  
O. S. CARPENTER.....Houston, Texas  
C. E. CLOUD.....Monroe, Mich.  
SHELDON COLEMAN.....Wichita, Kan.  
C. V. COONS.....New York, N. Y.  
STUART COOPER.....Wilmington, Del.  
R. E. CRAWFORD.....Minneapolis, Minn.  
L. J. FRETWELL.....Tulsa, Okla.  
H. L. FRUECHTENICHT.....Jackson, Mich.  
R. E. GINNA.....Rochester, N. Y.  
ELISHA GRAY II.....St. Joseph, Mich.  
G. C. GRISWOLD.....Brooklyn, N. Y.  
C. H. GUEFFROY.....Portland, Ore.  
HALL M. HENRY.....Cambridge, Mass.  
H. HANSELL HILLYER.....Savannah, Ga.  
ROBERT A. HORNBY.....San Francisco, Calif.  
R. H. JOHNSON.....Brooklyn, N. Y.  
JULIUS KLEIN.....Wyncote, Pa.  
WISTER H. LIGON.....Nashville, Tenn.  
DONALD C. LUCE.....Newark, N. J.  
CHESTER L. MAY.....Dallas, Texas  
J. J. MCKEARIN.....St. Louis, Mo.  
S. H. NICHOLS.....New York, N. Y.  
R. W. OTTO.....St. Louis, Mo.  
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ED PARKES.....Shreveport, La.  
JOHN C. PARROTT.....Roanoke, Va.  
J. C. PETERSON.....Pittsburgh, Pa.  
C. P. RATHER.....Birmingham, Ala.  
N. R. SUTHERLAND.....San Francisco, Calif.  
E. H. TOLLEFSON.....New York, N. Y.  
G. F. WATERS.....Syracuse, N. Y.  
S. D. WHITEMAN.....Hastings, Nebr.  
J. THEODORE WOLFE.....Baltimore, Md.  
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Chairman—Richard A. Puryear, Alabama Gas Corp., Birmingham, Ala.

**General Promotional Planning Committee**  
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**General Research Planning Committee**  
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## FINANCE COMMITTEE

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## LABORATORIES MANAGING COMMITTEE

Chairman—Lester T. Potter, Lone Star Gas Co., Dallas, Texas

## APPROVAL REQUIREMENTS COMMITTEE

Chairman—R. I. Snyder, Southern California Gas Co., Los Angeles, Calif.

# Associated organizations

## CANADIAN GAS ASSOCIATION

Pres.—Oakak L. Jones, The Consumers' Gas Co., Toronto, Ontario  
 Man. Dir.—W. H. Dalton, 55 Scarsdale Rd., Don Mills, Ontario

## GAS APPLIANCE MANUFACTURERS ASSOCIATION

Pres.—W. G. Hamilton, Jr., American Meter Co. Inc., Philadelphia, Pa.  
 Man. Dir.—Harold Massey, 60 East 42nd St., New York, N. Y.

## EASTERN GAS SALES COUNCIL

Chmn.—Frank R. Barnitz, The Brooklyn Union Gas Co., Brooklyn, N. Y.  
 Sec.—Robert N. Laux, A. G. A.

## FLORIDA NATURAL GAS ASSOCIATION

Pres.—A. H. Gaede, Florida Home Gas Co., De Land, Fla.  
 Sec.—K. B. Shawhan, Florida Home Gas Co., De Land, Fla.

## GAS AND PETROLEUM ASSOCIATION OF ONTARIO

Pres.—J. W. Ostler, Canadian Meter Co., Ltd., Milton, Ontario  
 Sec.—J. W. Bessey, 55 Scarsdale Rd., Don Mills, Ontario

## INDEPENDENT NATURAL GAS ASSOCIATION OF AMERICA

Pres.—W. M. Elmer, Texas Gas Transmission Corp., Owensboro, Ky.  
 Exec. Dir.—Lawrence H. Gall, 918-16th St., N.W., Washington 6, D. C.

## INDIANA GAS ASSOCIATION

Pres.—George R. Woehler, Southern Indiana Gas & Electric Co., Evansville, Ind.  
 Sec.-Tr.—R. A. Steele, Citizens Gas & Coke Utility, 2020 N. Meridian St., Indianapolis, Ind.

## MARYLAND-DISTRICT OF COLUMBIA UTILITIES ASSOCIATION

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Pres.—A. E. Chadwick, Gas and Fuel Corporation of Victoria, Victoria, Australia  
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## THE INSTITUTION OF GAS ENGINEERS

Pres.—T. C. Battersby, 658, Lordship Lane, London, N.22, England  
 Sec.—A. G. Higgins, 17, Grosvenor Crescent, London, S.W.1, England

## ITALIAN NATIONAL INDUSTRIAL GAS ASSOCIATION

Pres.—Avv. Renato Zaccane, Via XX Settembre, 41 Turin, Italy  
 Dir. Gen.—Dr. Guido Randone, Via L. Bissolati 76, Rome, Italy

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Pres.—Ing. I. Niculescu, Bucharest, Roumania  
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## SCIENTIFIC AND TECHNICAL SOCIETY OF THE PETROL INDUSTRY OF THE U.S.S.R.

Pres., Gas Section—A. Alexandrov, Moscow, U.S.S.R.  
 Scientific Sec.—A. Klimushin, Moscow, U.S.S.R.

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 Man. Dir.—Claes Lindgren, Torsgatan 24, Stockholm Va, Sweden

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 Gen. Sec.—A. Lihmann, 62 Rue de Courcelles, Paris, France

## UNION OF GERMAN GAS AND WATER WORKS

Pres.—G. Haider, Beethovenstrasse 17, Frankfurt am Main, Germany  
 Man. Dir.—O. Kohl, Beethovenstrasse 17, Frankfurt am Main, Germany



# American Gas Association

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Murray Hill 3-8200

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ENdclott 1-0473 ANgeles 1-8161

WASHINGTON OFFICE • 1725 Eye St. N.W., Washington 6, D. C.  
Federal 7-6630

## Officers

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\*First Vice-President ..... JOHN E. HEYKE ..... The Brooklyn Union Gas Co., Brooklyn, N. Y.  
\*Second Vice-President ..... MARVIN CHANDLER ..... Northern Illinois Gas Co., Aurora, Ill.  
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